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# **Macroeconomic instability in Afghanistan: causes and solutions**

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**University of Bordeaux**

Master's dissertation (*mémoire*)  
Master II "Applied Economics: Development"

# Macroeconomic Instability in Afghanistan: Causes and Solutions

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**Abstract:**

This dissertation contributes to an increasing literature on macroeconomic instability in developing countries. It makes a critical review of the literature and classifies the sources of instability under exogenous and endogenous factors. It then argues that the impact of exogenous shocks is determined by the structural characteristics of the economy which act as a risk-management mechanism. The paper also explains that macroeconomic instability is both a cause and a reflection of underdevelopment. Whilst macroeconomic instability constraints the long-term growth and thus development, it is also the result of the co-existence of various ‘underdeveloped structures’ in the economy. The paper also presents a case study on Afghanistan. Through a diagnostic approach, it identifies the sources of instability in the country and proposes a series of policies and reforms in order to overcome macroeconomic instability in Afghanistan.

**Résumé :**

Le présent mémoire est une contribution aux études sur l’instabilité macroéconomique dans les pays en développement. Il fait un compte-rendu de la littérature, et classifie les sources de l’instabilité macroéconomique sous des facteurs exogènes et endogènes. Ensuite, il soutient que l’effet des chocs exogènes est déterminé par les caractéristiques structurelles de l’économie qui fonctionnent comme un mécanisme de gestion de risque. Ce mémoire explique que l’instabilité macroéconomique est à la fois une cause et un reflet de sous-développement. D’une part, l’instabilité macroéconomique contraint la croissance de long-terme et donc le développement, d’autre part, l’instabilité est le résultat de coexistence de différentes structures sous-développées dans l’économie. Ce mémoire présente aussi un cas d’étude sur l’Afghanistan. A travers d’une approche diagnostique à ce sujet, il identifie les sources de l’instabilité dans le pays et propose une série des politiques et des réformes en vue de surmonter l’instabilité macroéconomique en Afghanistan.

JEL classification: E32, E60, O11, O53

Keywords: Macroeconomic stability, Macroeconomic volatility, Macroeconomic instability, Developing countries, Afghanistan, Diagnostic approach, Policy analysis

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## Abbreviations and Acronyms

Af./Afs.	Afghani(s)
AISA	Afghanistan Investment Support Agency
CSO	Central Statistics Office, Afghanistan
CPI	Consumer Prices Index
DAB	Da Afghanistan Bank (Central Bank)
DAC	Development Co-operation Directorate, OECD
DFID	Department for International Development, United Kingdom
IMF	International Monetary Fund
FAO	Food and Agriculture Organization
MAIL	Ministry of Agriculture, Irrigation and Livestock, Afghanistan
MoCI	Ministry of Commerce and Industries, Afghanistan
MoF	Ministry of Finance, Afghanistan
NATO	North Atlantic Treaty Organization
NRVA	National Risk and Vulnerability Assessment
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
SH	Solar Hijri (Persian calendar year)
UNCTAD	United Nations Conference on Trade and Development
UNODC	United Nations Office on Drugs and Crime
UNSD	United Nations Statistics Division
USGS	United States Geological Survey
WDI	World Development Indicators, World Bank
WEO	World Economic Outlook, IMF
WTO	World Trade Organization

## Remarks on data

The official calendar in Afghanistan is the Persian calendar, known as *Solar Hijri*. Its years are designated *AP* (Anno Persico) or *SH*. Financial year in Afghanistan is also adjusted according to the SH year, which starts on March 21<sup>st</sup> in the Gregorian calendar. For example, the SH 1389 corresponds to Mar 21, 2010 – Mar 20, 2011. The annual national accounts data on Afghanistan is usually calculated over the SH years, regardless of the source of data. For example, the data on GDP whether reported by foreign sources such as IMF or UNSD or by local sources such as CSO or DAB refer to SH years. For simplicity, the annual national accounts data are sometimes indicated in a single Gregorian format such as 2010, instead of 2010/11 (which both refer to 1389).

A billion means a thousand million ( $= 10^9$ ) and a trillion means a million million ( $= 10^{12}$ ).

## Introducing key questions

Developing countries have always been characterized with economic volatility and an uncertain macroeconomic environment. While developed countries have enjoyed stability since the 1980s, macroeconomic instability has been a serious concern in the developing world. From the Latin American debt crisis in 1982, to the Asian financial crisis in 1997, and to the world food price crisis in 2007, developing countries have suffered from serious volatilities in output growth, inflation, exchange rate, interest rates, and other variables of concern. These macroeconomic volatilities are not only observed in low-income countries (LICs), but they are also present in middle-income economies. However, the source and nature of these volatilities differ from one group to another. The magnitude, depth and persistence of macroeconomic volatility are more pronounced in poor and least-developed countries (LDCs) than in more developed ones. For low-income countries, macroeconomic instability is of a major concern because it seriously affects the poor and has negative impact on their long-term growth.

In a seminal paper, Lucas (1988) attracted the attention of economists to this phenomenon, noting that “within the advanced countries, growth rates tend to be very stable over long periods of time.... For poorer countries, however, there are many examples of sudden, large changes in growth rates, both up and down.” Since then, economists have specifically been interested in studying macroeconomic instability in developing countries. However, in traditional macroeconomics, there tended to be a dichotomy between “growth” and “volatility” in economic aggregates. Growth theory and Real Business Cycle (RBC) theory have traditionally been treated as unrelated areas of macroeconomics. Therefore, for a long time, economic volatility was treated as a secondary phenomenon in the business cycle literature. It was considered a second-order issue of interest and a phenomenon related to the fluctuations in the business cycle.

However, since the seminal paper of Ramey and Ramey (1995) which showed that volatility and growth rate are strongly correlated, research on macroeconomic volatility has been carried out with methods and models independent from the RBC theory. Macroeconomic instability has thus developed into its own field of research over the last decade, thanks to the recognition that “non-linearities ... magnify the negative effects of volatility on long-run growth and inequality, especially in poor countries” (Aizenman and Pinto, 2005).

The concept of macroeconomic stability/instability was popularised during the 1980s with the stabilisation policies prescribed by the Washington-based institutions (i.e. International Monetary Fund and the World Bank) to the developing countries affected by the debt crisis. However, macroeconomic stability should not be conceived exclusively in the context of stabilisation policies of the IMF. Under the Structural Adjustment Programs (SAPs), macroeconomic stability was defined in a very narrow sense; focusing primarily at low inflation, price stability, and low fiscal and current-account deficits. Nonetheless, such a narrow consideration was criticized by some economists from the academic milieu, both for not considering other important variables (mainly real variables, including unemployment) and for considering a very narrow margin of variability for some variables; for example insisting on single digit threshold for inflation (Stiglitz et al., 2006). The concept of macroeconomic stability has undergone considerable changes in the economic discourse. The contemporary definition of macroeconomic stability enjoys a much broader sense.

It should also be noted that the concept of macroeconomic volatility is not necessarily associated with economic crises. Although volatility usually appears during the periods of crisis in developed countries, it is an endemic phenomenon in developing countries and must not be confined to instances of crisis<sup>1</sup> (Malik and Temple, 2009). Moreover, a period of macroeconomic volatility is not necessarily a period of recession. A country can well suffer from macroeconomic volatility without “formally” being into an economic recession.<sup>2</sup>

This dissertation contributes to the literature on macroeconomic instability in developing countries. The first part of this dissertation seeks to answer three sets of questions. First, what are the possible costs of macroeconomic volatility in terms of welfare and other economic indicators? Are there costs associated with macroeconomic instability or is macro instability neutral in regard to the welfare of the economy? Secondly, this dissertation identifies the exogenous and endogenous sources of macroeconomic instability by reviewing the results of empirical and theoretical studies. Finally, this paper seeks to answer if macroeconomic instability is a cause *or* a reflection of underdevelopment. This question is crucial for policy analysis, because if macroeconomic instability is a source of underdevelopment, then overcoming instability would be a key to prosperity and a solution to all underlying problems in LICs. And if it is a consequence and a reflection of underdevelopment, then instead of focusing on policies to overcome instability, policy-makers should engage with broad-based structural and development policies. But if it is both

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<sup>1</sup> For example, recent instances of crisis in the developing world include Mexico in 1995, Russia in 1998, Turkey in 2001, Argentina in 2002, and world commodity prices crisis in 2008.

<sup>2</sup> Although there is no formal definition for “economic recession,” but as a rule of thumb ‘two consecutive quarters of a decline in real GDP’ is considered a recession.

a cause and a reflection of underdevelopment, then it requires a more complex and in-depth analysis of the situation.

The second part of this dissertation presents a case study on Afghanistan and makes diagnosis of macroeconomic instability in the country. It identifies the sources of instability and suggests a series of policies and reforms to overcome and to correct instability in the country. Afghanistan can be a good example for the analysis of macroeconomic instability, because since its political shift in 2002 it has experienced serious oscillations in economic growth and price level. The limitation of this paper is that it does not take into account the post-conflict explanations in analysing macroeconomic instability in Afghanistan. The analytical framework presented for the analysis of instability ignores the post-conflict characteristics of the country.

The methodology employed in the two parts of this dissertation is different. In Part I, I make a critical review of the literature on macroeconomic instability in developing countries, and I classify the sources of instability under exogenous and endogenous factors. By classifying them so, I will show that these are the structural characteristics of the economy which determine the nature and level of impact of exogenous shocks on the economy. In Part II, I employ a diagnostic approach to treat macroeconomic instability in Afghanistan. First, I will identify the sources of instability in Afghanistan through quantitative and qualitative analytical methods. Secondly, I will propose some general policies which can help reduce the economy's exposure to external shocks and install stability in the macroeconomic environment.



## **Part I. Macroeconomic Instability**

The first part of this dissertation is divided into four sections. The first section attempts to give a definition of macroeconomic instability and presents some stylised facts on macroeconomic volatility. The second and third sections make review of the literature on macroeconomic instability; they explain economic costs of macroeconomic volatility and identify the exogenous and endogenous factors which induce instability in the economy. Finally, the last section explains whether macroeconomic instability is a source or a reflection of underdevelopment.

### **1. Definition and some stylised facts**

#### **1.1. Macroeconomic stability**

The concept of macroeconomic stability is widely used in the policy-oriented literature, but is almost never properly defined. Based on a large literature which deals with this subject but which has rarely attempted to formally define this term, I present a definition which covers the various – and yet closely related – meanings understood from this concept. Macroeconomic stability can be described as a situation in which: (i) the level and growth in key macroeconomic variables, as well as the relevant balances between them, are sustainable; (ii) variability of macroeconomic variables is moderate and lies within an acceptable range; and/or (iii) full uncertainty regarding the macroeconomic environment does not exist.

The first part of the definition refers to having a sustainable growth rate, low unemployment, moderate inflation, and enjoying internal and external balances; for example, balance between domestic demand and output, balance of payments, fiscal balance, and balance between savings and investment. However, these relationships need not necessarily be in exact balance (IMF, 2001). Imbalances such as fiscal and current account deficits or surpluses can perfectly exist in a stable macroeconomic environment, provided if they are *sustainable*. Furthermore, there is no unique set of thresholds for each macroeconomic variable between stability and instability (IMF, 2001), and there is no consensus on the range within which the levels of these variables should lie. For example, the IMF strongly emphasizes on keeping inflation rate in single digits or even as lower as possible, while, on the other hand, other economists maintain that having an inflation rate between 20 and 30 percent is totally sustainable for developing countries and will not have any negative effect on their growth (Stiglitz et al., 2006).

The second part of the definition implies that the variability of macroeconomic variables should be small. But defining a range for each variable would be inaccurate and improper, because the amplitude of fluctuation for a given variable would depend on the level of balance between other relevant macroeconomic identities. However, the exchange rate has sometimes been subjected to the establishment of a ‘range’ under monetary management systems and stability pacts. For example, the Bretton Woods agreement initially set a one-percent band for the pegged exchange rates vis-à-vis the US dollar, and the Maastricht criteria fixed the exchange rate fluctuation for the members of the Economic and Monetary Union of the European Union at a margin of 2.25 percent.

The third component reflects the idea that the behaviour and overall movement of macroeconomic variables should be predictable by economic agents and should not be subject to full uncertainty. For example, an environment where investors can predict the future rates of growth and inflation and where there is no major uncertainty over the policy makers’ decisions can be characterized with macroeconomic stability.

Historically, during the post-war years dominated by Keynesian thinking, macroeconomic stability basically meant a mix of external and internal balance, which in turn implied full employment and stable economic growth, accompanied by low inflation. During the 1970s and 1980s (and further during 1990s), price stability, and fiscal and current-account balances moved to the centre of attention, supplanting the Keynesian emphasis on “real” economic activity. In recent years, the emphasis has once again been put on *real* stability (unemployment re-gaining importance), long-term sustainable and *equitable* growth, and healthy financial sector (Ocampo, 2005). Stiglitz et al. (2006) emphasize that focus should not only be on price stability but on real variables (real output, unemployment, and inequality) as well, and one has to distinguish between intermediate goals (such as inflation) and final objectives (such long-term, equitable growth).

## **1.2. Macroeconomic volatility**

Despite the fact that ‘macroeconomic instability’ and ‘macroeconomic volatility’ tend to be employed interchangeably and are closely inter-related, there exists, however, a minor difference between these two terms.

Montiel and Servén (2004) refer macroeconomic instability to “phenomena that decrease the predictability of the domestic macroeconomic environment.” Some other economists, however, define macroeconomic instability in a much broader sense, as “a situation of economic malaise, where the economy does not seem to have settled in a steady

position” (Azam, 2001). Macroeconomic instability can take the form of *volatility* of key macroeconomic variables or of *unsustainability* in their behaviour (Montiel and Servén, 2004). Thus, in addition to the concept of volatility, “unsustainable” performances in macroeconomic variables (such as low and unstable growth rate, high inflation, large unemployment, unsustainable fiscal and current-account deficits, etc.) are also included in the definition of instability, while macroeconomic volatility refers uniquely to large fluctuations in macro variables and to the uncertainty associated with them. There can well be a situation which could qualify as of macroeconomic instability, but not as macroeconomic volatility; for example, a country which suffers from low economic growth, high inflation and large fiscal deficit, but their respective rates and levels are stable and non-volatile.

Hence, this paper defines macroeconomic instability as a situation where: (i) unsustainable imbalances appear in the economy; (ii) variability in key macroeconomic variables is large (i.e. exceeding a certain threshold); and/or (iii) macroeconomic environment is highly uncertain.

It would not be irrelevant to elaborate the differences between volatility, uncertainty, and risk. Aizenman and Pinto (2005) make the following distinction between the three of them: *Uncertainty* describes a situation where several possible outcomes are associated with an event, but the assignment of probabilities to the outcomes is not possible. *Risk*, in contrast, permits the assignment of probabilities to the different outcomes. *Volatility – or variability –* is allied to risk in that it provides a measure of the possible variation or movement in a particular economic variable or some function of that variable, such as growth rate. It is measured based on observed realizations of a random variable over some historical period. Conceptually, total variability can be decomposed into ‘predictable’ and ‘unpredictable’ components. Unpredictable variability captures pure risk or uncertainty, and constitutes a “*shock*.” It can be measured or computed as the residual from a forecasting equation for total variability.

Another distinction is sometimes made between “*normal volatility*” and “*crisis volatility*.” Crisis volatility is a continuum of large or extreme shocks, exceeding a certain cut-off point. There are three methods to define extreme volatility: the imposition of an absolute threshold in magnitude (for example, commodity price changes of more than 10 percent), the imposition of a distributional threshold (the 5 percent largest declines), and the use of a deviation criterion (observations that are at least 2 standard deviations above the mean) (Wolf, 2005). It is also important to note that risks associated with macroeconomic volatilities are *aggregate or common risks* which affect most or all economic sectors equally,

in contrast to *idiosyncratic risks* which affect only specific individuals or particular groups of economic sectors (World Bank, 2000).

In this dissertation, the terms volatility and instability may have been used synonymously in some places.

### 1.3. Fluctuations in Real Business Cycle theory

Traditional macroeconomic theory suggested that transitory shocks do not have irreversible and permanent effects. Therefore, analysis of fluctuations was done in the context of aggregate supply/aggregate demand model, while evolution of long term variables was analysed through growth models. This dichotomy between the theoretical analysis of fluctuations and of growth relates to the static decomposition between *cycle* and *trend*; it therefore assumes that shocks do not have permanent effect on the level of a series.

However, the dichotomy between cycle and trend was challenged by several empirical and theoretical researches during the 1970s and 1980s. These studies showed that short-term movements in all macroeconomic aggregates have an impact on the long-run level of their series (i.e. their trends). In other words, transitory shocks which are at the basis of cyclical phenomenon persist in the long run. Macroeconomic time series are, thus, composed of permanent (trend) and cyclical components. However, the acknowledgement of this fact has serious implications. At the statistical level, it makes the traditional dichotomy between cycle and trend unmeaningful. In fact, the trend cannot be considered independent of and unaffected from transitory shocks. And at the theoretical sphere, it requires analysing the fluctuations and the growth in a unified way (Hairault, 2000). This latest methodology constitutes the principals of the *real business cycle (RBC) theory*.

The RBC model extends the Neo-classical growth model in three main ways: First, it adds a *labour-leisure choice* which allows for the possibility of variable employment over time, and thus flexible wages. The RBC theory further assumes that prices in other markets are also flexible and that markets always clear out. Secondly, it allows for *random shocks* to exogenous real variables. In particular, it allows for variations in “technology” and/or government spending. As a result, households and firms face uncertainty regarding future variables. Finally, it assumes that economic agents make *rational expectations* about the future and operate in competitive markets.

In general, RBC theory models the economy using dynamic general equilibrium models (DGEM). A simple RBC model is based on the same aggregate function as that in a neoclassical growth model with constant return to scales:

$$Y_t = F(K_t, A_t L_t) \quad (1)$$

where  $A_t$  is an exogenous process of technology which evolves according to a *trend stationary* model, such as:

$$\ln A_t = \ln \bar{A} + gt + z_t \quad (2)$$

$\ln \bar{A}$  is a constant,  $g$  is the trend growth rate (assumed to be known with certainty) and  $z_t$  represents deviations around the trend. These deviations from trend are further assumed to follow a first-order autoregressive process:

$$z_t = \rho_z z_{t-1} + \varepsilon_t \quad (3)$$

where  $\rho_z$  is a persistence parameter and  $\varepsilon_t$  represents a “technology shock.”

Hence, according to RBC theory, shocks which induce fluctuations and cyclical behaviour are induced by *stochastic variations in technology* and these technological and productivity shocks are persistent over some period of time (depending on the value of  $\rho_z$ ). Movements in output and employment are thus seen as efficient responses of a perfectly competitive economy to a productivity shock.

However, the recent literature which has emerged independently from the RBC theory has investigated other sources of volatility, especially in the context of developing countries. These sources of volatility will be discussed in detail in section I.3.

## 1.4. Measuring volatility

A necessary condition for measuring volatility in an economic time series is that the series of interest must be *stationary* – meaning its mean and variance should be constant over time. However, many economic variables are *non-stationary* in level; they fluctuate around a changing mean and the size of volatility varies over time. For example, the GDP (Gross Domestic Product) is usually non-stationary, which increases with varying average and its fluctuations around this rising trend are also variable. There are two major ways to make a series stationary.

The first method is to simply take the *first difference* of the series. Although first-differencing may not always be sufficient to obtain stationarity; sometimes a second difference may be necessary. First-differencing is, in fact, akin to taking the growth rate of the series. If the variable is expressed in logarithmic form, then first-difference approximates a growth rate, as shown in the following equation:

$$\Delta \log(X) = \log X_t - \log X_{t-1} = \log \left( \frac{X_t}{X_{t-1}} \right) \quad (4)$$

The second method is to separate the permanent component (*trend*) from the transitory component (*cycle*) in the data. Once the permanent component is removed from the data, the cyclical component can then be analysed. Several methods have so far been proposed in econometrics for decomposing a series into trend-cycle elements. Here, I restrict myself in explaining very briefly the two most widely used methods, namely the Hodrick-Prescott filter (Hodrick and Prescott, 1997) and the Beveridge-Nelson decomposition (Beveridge and Nelson, 1981).

The *Hodrick-Prescott technique* extracts the trend ( $\mu_t$ ) by minimizing the following sum of squares program:

$$\min_{\{\mu_t\}_{t=1}^T} \sum_{t=1}^T (X_t - \mu_t)^2 + \lambda \sum_{t=2}^{T-1} [(\mu_{t+1} - \mu_t) - (\mu_t - \mu_{t-1})]^2 \quad (5)$$

where  $\lambda$  is an arbitrary constant reflecting the cost or penalty of incorporating fluctuations into the trend. The first term in expression (5) is the penalty associated with the deviation of the adjusted trend ( $\mu_t$ ) from the actual series ( $X_t$ ). The second term penalizes the adjusted trend if its growth over a period is very different from its growth in the previous one. Thus  $\lambda$  acts as a smoothing parameter; it controls the smoothness of the adjusted trend ( $\mu_t$ ); if  $\lambda \rightarrow 0$ , the trend approximates the actual series. If  $\lambda \rightarrow \infty$ , the trend becomes linear. The value of  $\lambda$  depends on the frequency of data with the standard measures being  $\lambda=100$  for annual data,  $\lambda=1600$  for quarterly data, and  $\lambda=14400$  for monthly data.

The trend component in Hodrick-Prescott decomposition is therefore a weighted average of past, present and future values. The *cyclical* component is the residual which is defined as:

$$x_t^c = X_t - \mu_t = X_t - \sum_{j=-J}^J a_j X_{t-j} \quad (6)$$

The second method, *Beveridge-Nelson decomposition*, states that any unit root process can be written as a sum of a random-walk process and a stationary process:

$$\Delta x \equiv (1-L)x_t = A(1)e_t - C(L)e_t \quad (7)$$

where  $L$  is the number of lags;  $A(L) = 1 + A_1L + A_2L^2 + A_3L^3 + \dots$  is a polynomial with infinite degree;  $A(1)$  can be interpreted as the multiplier of a shock observed in  $t$ ; and  $e_t$  is a

random variable which constitutes a shock.  $A(1)e_t$  represents the non-stationary component and  $C(L)e_t$  is the stationary component.

$C(L) = A(1) - A(L)$  is verified, and by construction  $C(1)=0$ .

$$C(L) = A(1) - A(L) = A_1(1-L) + A_2(1-L^2) + A_3(1-L^3) + \dots$$

$$C(L) = (1-L)[A_1 + A_2(1+L) + A_3(1+L+L^2) + \dots]$$

$$C(L) = (1-L)B(L) \quad (8)$$

where  $B(L)$  represents a polynomial of lags. By replacing (8) in equation (7), we obtain:

$$x_t = \frac{A(1)}{1-L}e_t + B(L)e_t = A(1)\sum_{i=0}^t e_{t-i} + B(L)e_t \quad (9)$$

Equation (9) shows that  $x_t$  is composed of a trend component, called *stochastic trend* because it depends on the sum of all shocks since the initial date, and a cyclical component which is stationary. We also observe that there is a serial correlation between the stochastic trend and the cyclical component, because they are both affected simultaneously by the same shock  $e_t$ .

Once a non-stationary series is made stationary, there are several techniques to measure its volatility. Following are some of the most usual techniques:

Mean absolute deviation:  $\frac{1}{T} \left| x_t^c - \text{mean}(x_t^c) \right|$

Standard deviation:  $\sqrt{\frac{1}{T} \sum (x_t^c - \text{mean}(x_t^c))^2}$

Coefficient of variation:  $\frac{\sqrt{\text{Var}(x_t^c)}}{\text{mean}(x_t^c)}$

Relative standard deviation (in %):  $\left| \frac{\sqrt{\text{Var}(x_t^c)}}{\text{mean}(x_t^c)} \right| \times 100$

All these measures of volatility are calculated either on the cyclical component of the series (already in log), or on the growth rate (equivalent to the logarithmic first difference in level) of the series. Hence, the standard deviation must be between 0 and 1. The relative standard deviation is expressed in percentage, and it is useful when comparing two or more series with different units or scales.

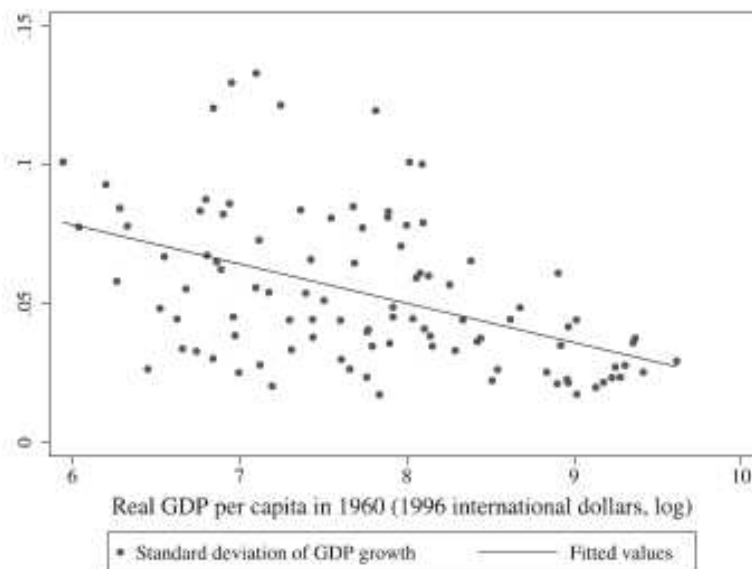
## 1.5. Stylised facts

### *(i) Volatility is larger and more persistent in developing countries than in advanced economies:*

One of the macroeconomic features of developing countries which distinguish them from advanced economies is a higher degree of economic volatility. Empirical studies show that macroeconomic volatility is “negatively” correlated with the level of income of the country. Figure 1.1 shows that developing countries with lower level of income per capita tend to have higher growth volatility, while developed countries with higher income per capita enjoy less volatile growth.

Rand and Tarp (2002) found that output volatility in developing countries is 15 to 20 percent higher than that in developed countries. Developing countries also show considerable persistence in output fluctuations (Agénor et al. 2000). Malik and Temple (2009) observed that over the period of 1960-1999, “the median (across countries) of the standard deviation of annual growth rates was more than three times higher for low-income countries than for OECD member countries.” The explanations behind this stylised fact are that developing countries have ‘underdeveloped economic structures’ such as underdeveloped financial

**Figure 1.1: Growth volatility and level of income**



Source: Koren et al. (2007)

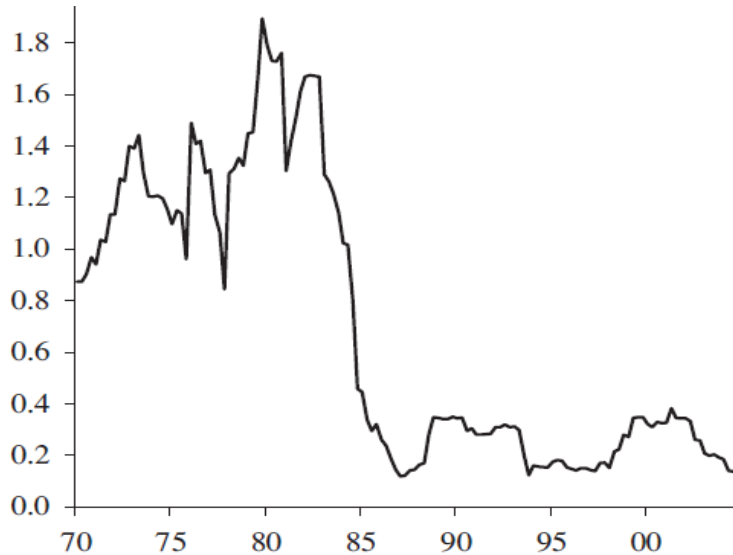
sector, weak institutions, weak automatic stabilizers, inadequate and undiversified trade structure, distortionary policies and microeconomic rigidities. These elements will be elaborated in detail in section I.3.

Historically, developed countries have enjoyed stable macroeconomic performance since the 1980s, while, in contrast, macroeconomic volatility has soared in the developing world. Figures 1.2 and 1.3 compare macroeconomic volatility in the United States and in Argentina, respectively. The U.S. economy has become much less volatile since 1985, as the volatility of GDP growth has fallen by more than half since then. Many observers refer to this



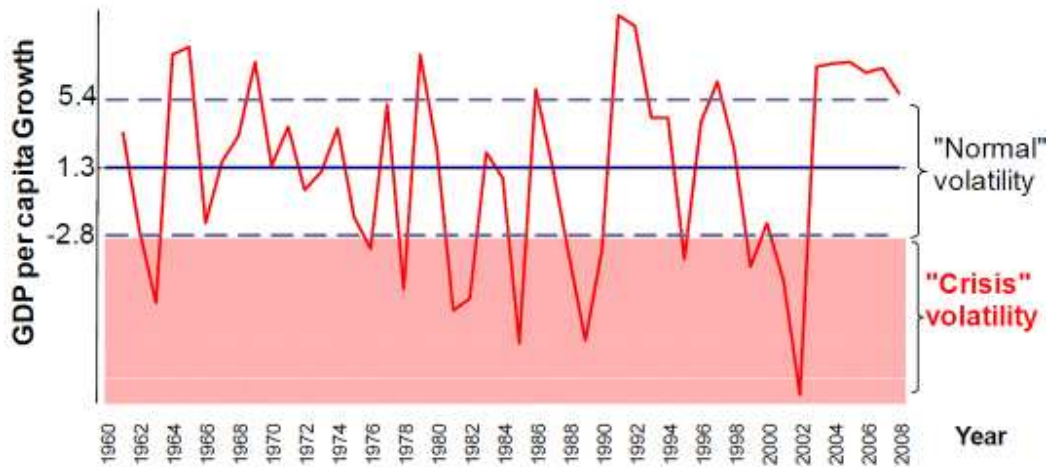
phenomenon as the “Great Moderation.” Conversely, volatility in the Argentinean economy has increased since 1980, both in magnitude and in frequency; crisis volatility has appeared more often and more severely in Argentina.

**Figure 1.2: Volatility in US real GDP growth (five year moving variance)**



Source: FRBSF (2008)

**Figure 1.3: Volatility in Argentina's GDP per capita growth (1960-2008)**



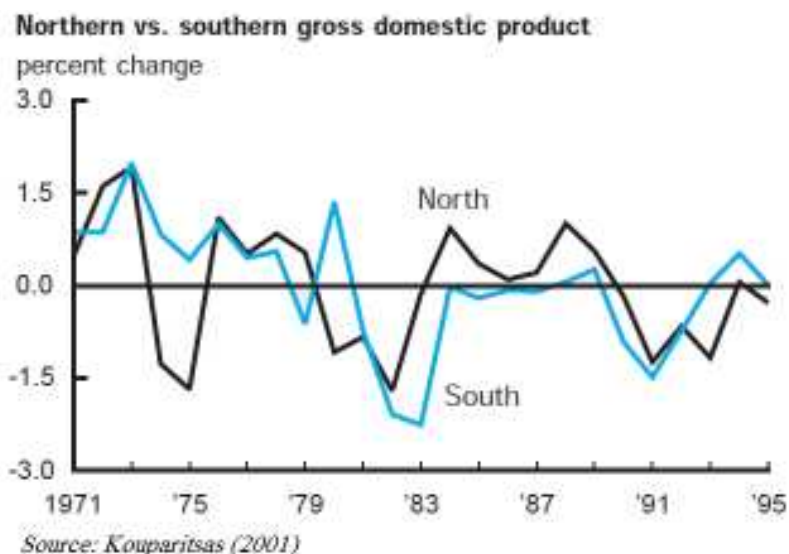
Source: Loayza (2007)

**(ii) Volatility in developing countries is a function of business cycles in developed countries:**

Empirical studies have also found that output fluctuations in developing countries are positively correlated with economic activity in industrial countries and negatively correlated with real interest rates in such countries (Agénor et al. 2000; Kouparitsas, 2001). This relationship could be significantly important for those developing countries which have

substantial trade links with industrial countries. Agénor et al. (2000) found that for many of developing economies that have positive correlations with the economic activity in advanced economies, “the correlations generally peak at or near a zero lag, suggesting that output fluctuations in industrial economies are transmitted fairly quickly.” Business cycle conditions in industrial economies could also influence fluctuations in developing economies through

**Figure 1.4: Cyclical movement in GDP growth in developed and developing countries**



the world real interest rate. The latter is likely to have an important effect on economic activity in developing world, not only because it affects domestic interest rates, but also because it reflects credit conditions in international capital markets.

**(iii) Small economies “intrinsically” experience higher economic volatility:**

This is similar to the first stylised fact, but what differs is the explanation given for the source of volatility. The first stylised fact stated that developing countries experience higher volatility because they have underdeveloped economic structures, but in here the argument is that it is simply because they are “economically smaller” (Crucini, 1997; Easterly and Kraay, 2000; Ahmed and Suardi, 2009). Technically speaking, the argument is based on the ‘aggregation’ of idiosyncratic shocks to individuals in an economy (Canning et al., 1998). The transfer and aggregation of shocks depend on the strength of correlations or interactions between individuals and on the strength of microeconomic links between agents in the economy. At the aggregate level, macroeconomic volatility (as the aggregation of all idiosyncratic shocks at micro level) declines with the size of the economy because the aggregation of shocks is not perfectly linear. In short, the larger the size of the economy is, the smaller the magnitude of volatility will be (Canning et al., 1998).

Crucini (1997) compared G7 countries with 68 smaller countries, using a one-sector two-country general equilibrium model in which the *only* source of heterogeneity is the economy size. He showed that even if developing countries were developed, had the same market structure, the same financial, monetary and fiscal institutions, and faced the same underlying disturbances, they would still experience more severe business cycles. He gives the following explanation for this phenomenon: Consider two countries with substantial difference in their size of economy, and suppose that productivity rises in the smaller economy while remaining unchanged in the larger economy. Physical capital will flow from the larger country to the smaller country until the marginal product of capital is equated internationally.<sup>1</sup> Owing to the asymmetry in economic size, the total amount of world capital that must be reallocated is quite small since each unit per capita reduction in capital in the large country increases the per capita capital stock in the small country many times over (moving the marginal product of capital in the small country downward very quickly). As a consequence, the changes in investment and output in the small country, in response to both domestic and foreign shocks, will be much larger than those in the larger country. Therefore, internal and external shocks generate more severe fluctuations in small countries.

***(iv) Terms-of-trade and output fluctuations are strongly positively correlated:***

The relationship between cyclical movements in the terms of trade and output fluctuations has been found to be significant and strong. The greater the openness of the economy, the greater is the correlation between terms-of-trade and growth volatility. This issue will be elaborated in detail in section I.3.1.

***(v) Real wage fluctuations are procyclical:***

Establishing stylised facts about the cyclical behaviour of real wages has important implications for discriminating among different classes of models. For instance, Keynesian models imply that real wages are countercyclical, whereas equilibrium models of the business cycle imply that real wages are procyclical. Empirical studies, however, support the fact that there is a procyclical variation in real wages (Agénor et al. 2000; Male, 2009). Real wages increase in periods of expansion and higher growth, and decline in periods of recession and slow economic growth.

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<sup>1</sup> The argument does not require exact equality of marginal products across countries, but only requires that capital flow should be in the direction which could reduce the difference between the countries.

## 2. Costs of macroeconomic instability

Recent research and studies have found that macroeconomic instability has significant costs in terms of welfare loss, increase in inequality and poverty, and decline in long-term growth. Below are some of the most important consequences of macroeconomic instability as identified by empirical and theoretical studies.

### 2.1. Negative impact on investment and long-term growth

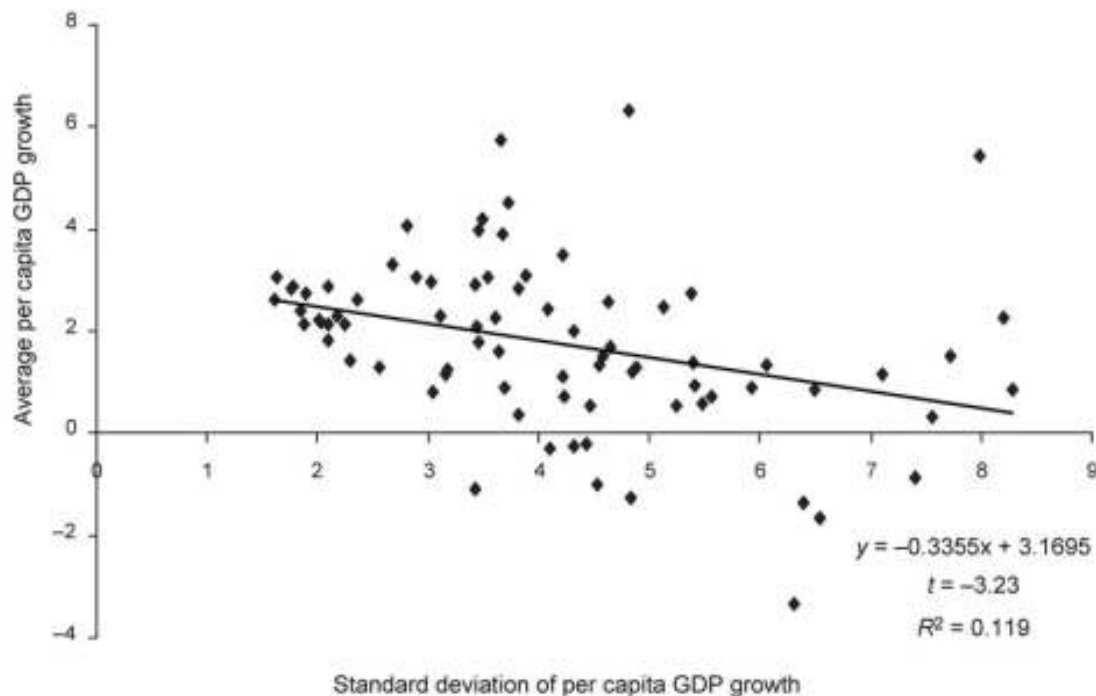
Theoretical growth models, such as the AK and Schumpeterian models, suggest that volatility induces a *higher* growth rate (Aghion and Banerjee, 2005). In an AK model, long-run growth is entirely driven by capital accumulation, and the average growth rate depends positively on the savings rate. Macroeconomic volatility will have *a priori* ambiguous effects: (i) to the extent that it increases uncertainty about future income, individuals increase precautionary savings, which in turn leads to a higher equilibrium savings rate and thus higher average growth rate; (ii) But to the extent that macroeconomic instability is associated with higher uncertainty about the expected return to saving, it may reduce the propensity to save, thereby lower growth rate. At the end, the dominance of these two opposing effects depends on the intertemporal elasticity of substitution in individual consumption over time. If the intertemporal elasticity of substitution is greater than 1, the final effect of macroeconomic instability is to reduce the expected return to saving and thus discourage savings. But the empirical results show that the intertemporal elasticity of substitution is generally less than 1, and therefore volatility increases the growth rate.

In a Schumpeterian model, growth is generated through short-run capital investments and long-term productivity-enhancing investments such as R&D, and organisational capital. During the periods of recession, there is lower return to productive capital investments due to lower demand. On the contrary, the opportunity-cost of productivity-enhancing investments is lower. Hence, firms engage in R&D and creation of organisational capital. These productivity-enhancing investments during economic recessions will finally increase the future long-run growth.

Empirical studies, however, have found totally different results. In a seminal paper, Ramey and Ramey (1995) pointed out that volatility is not neutral; it has adverse effects on growth. They showed that countries with higher volatility have lower mean growth, even after controlling for other country-specific growth correlates. They explained that “the negative effect of volatility stems mainly from volatility of innovations to GDP growth, which reflects uncertainty.”

Macroeconomic volatility hampers growth through creating uncertainty in the macroeconomic environment and depressing the private investment. In fact, investment is subject to irreversibility and asymmetric adjustment costs. Following exogenous shocks, private capital formation will be negatively affected (Agénor, 2004) and private investment declines. There are also several other channels through which macroeconomic instability may affect private investment. In the presence of uncertainty in the macroeconomic environment, risk-averse firms will not invest in risky activities and will reallocate resources to safer yet less productive activities. Therefore the level of capital accumulation may decrease in the economy. Macroeconomic instability also affects the “confidence” of economic agents, which can discourage domestic investment and lead to capital flight – which has potential adverse effects on long-term growth. If macroeconomic instability is conjoined with higher level of inflation, it may lower investment by distorting price signals and the information

**Figure 1.5: Volatility and growth of GDP per capita (1960-2000)**



Source: Loayza et al. (2007)

content of relative price changes (Agénor, 2004). In addition, a high variable inflation rate has adverse effect on expected profitability – if firms are risk averse, their level of investment will fall.

Hnatkovska and Loayza (2005) found that a one-standard-deviation increase in growth volatility leads to 1.3 percentage-point drop in the growth rate – which represents a sizeable loss. Under a crisis situation, the loss would further increase to 2.1 percentage points

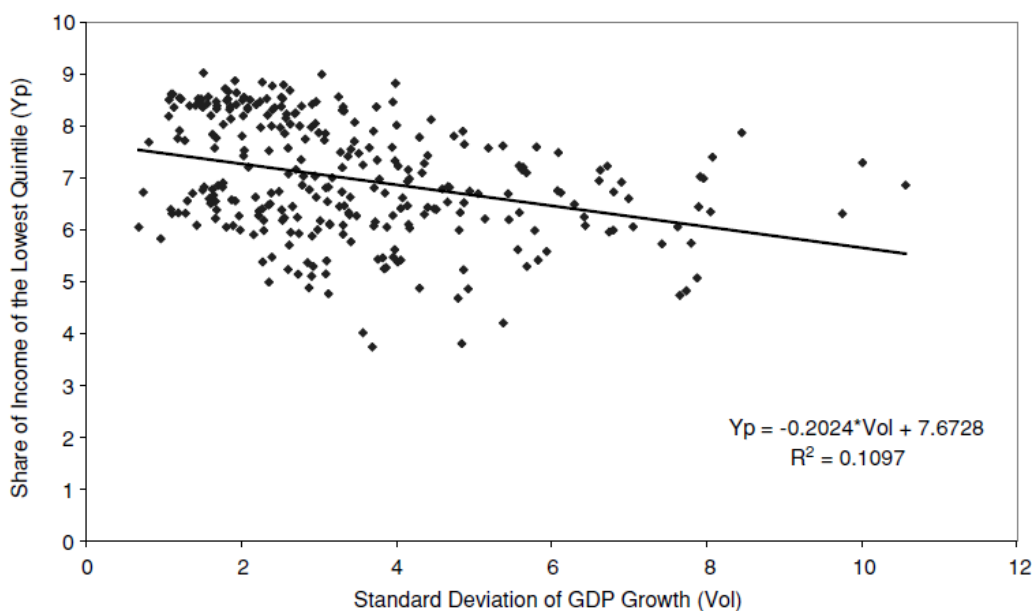
of per capita growth rate. They also found that the adverse effects of volatility on growth is larger in countries that are poor, institutionally underdeveloped, undergoing intermediate stages of financial development, or are unable to conduct countercyclical fiscal policies.

It can also be argued that if macroeconomic instability affects negatively the long-term growth, then it may also slow down the development process in the country, since having a sustainable growth is a necessary condition – if not sufficient – for the development. Did the countries which enjoyed “better” macroeconomic stability developed faster compared to those that suffered from serious macroeconomic instability? The answer to this question is yet to be explored. It can be an important area of research for future studies.

## 2.2. Increase in inequality and poverty

Macroeconomic instability can affect poverty through its impact on *income distribution*. Cross-country studies have found a negative correlation between volatility and inequality. Figure 1.6 plots the relationship between growth volatility and income inequality (measured by the income share of the bottom quintile) over the period 1957-1999. However, the causality between inequality and volatility can go in both directions. On the one hand, macroeconomic instability can lower incentives for human capital accumulation which is a good determinant of the level of inequality. Volatility affects different segments of the population differently – depending on the nature and source of macro volatility; it may affect negatively the poor while benefiting the rich. In fact, at the trough of a business cycle, since

**Figure 1.6: Volatility and Income inequality**



Source: Wolf (2005)

the poor do not have self-insurance mechanisms they are affected through a reduction in their income. While the rich who are well protected by self-insurance mechanisms may not experience any decline in income. Hence, growth volatility may increase inequality between the rich and the poor. On the other hand, inequality itself can increase social instability and thus macroeconomic volatility.

Laursen and Mahajan (2005), after controlling for the endogeneity between volatility and inequality, found that the negative effect of macroeconomic volatility on income inequality is statistically significant and robust. They also found that the magnitude of this effect is different across regions which may be due to differences in structural characteristics and in risk-management mechanisms.

Macroeconomic instability can affect income distribution through 5 different channels (Laursen and Mahajan, 2005): relative prices between different goods and services or between factor inputs and outputs; labour demand and employment; returns on physical assets and capital gains or losses; public or private transfers; and community environment effects. The relative importance of these different transmission channels depends, however, on the *source and nature of volatility*. For example, the effect on income distribution of a macroeconomic volatility that is induced by a shock to agricultural commodity prices is different than a one induced by a financial shock. Nonetheless, in most cases the poorest segment of the population bears the largest burden of the adverse effects of macroeconomic instability. First, their income sources are less diversified – usually their only source of income is their labour earnings. Secondly, their lower levels of assets and limited access to financial services make it more difficult to seek self-insurance. And finally, the poor depend more on public transfers and social services, mainly for health and education, which are likely to be cut during the periods of crises.

Hence, by raising income inequality, macroeconomic instability can contribute to an increase in poverty in the society. Negative income shocks may affect income distribution either *temporarily* which increases transitory poverty, or *permanently* which in this case exacerbates chronic poverty (Laursen and Mahajan, 2005). Even if effective poverty-alleviation and pro-poor policies are undertaken in order to halt the impact of macro instability on poverty, it is suspected that *at least* macroeconomic instability will “result in slower poverty reduction for a given average rate of growth” (Guillaumont and Korachais, 2008).

As stated earlier, the causality can also run from inequality to macroeconomic instability. A high degree of inequality has not only negative implications for long-term

development but also for short-term macroeconomic fluctuations (Agénor and Montiel, 2008). Income inequality may create social instability which can exacerbate macroeconomic instability. In addition, countries with high levels of income inequality tend to have a small and volatile tax base; this may translate into high volatility of public expenditures. Iyigun and Owen (2004) argued that income inequality may engender private consumption variability when the ability to obtain credit depends on income. Using cross-country panel data for the period 1969-1992, they found that in high-income countries, greater income inequality is associated with more growth volatility in consumption and real GDP, whereas in low-income countries, higher levels of income inequality tend to be associated with less volatility. A possible reason for such different effects in high- and low-income countries is that financial development and availability of credit are positively associated with higher levels of per capita income. Ghiglino and Venditti (2007), using a neo-classical growth model with preference heterogeneity functions, showed that wealth inequality may also lead to endogenous fluctuations in growth. Therefore, developing countries which are characterized by inequality *intrinsically* experience macroeconomic instability.

### **2.3. Welfare costs**

Macroeconomic instability has both a direct and an indirect welfare cost for the economy. Its direct welfare loss is generated through causing consumption volatility. Studies show that the welfare gains from reducing consumption volatility can be substantial (Loayza et al., 2007). It also entails an indirect welfare cost through its adverse effect on income growth and development.

Lucas (1987) in his famous book “*Models of Business Cycles*” tried to estimate the welfare costs of economic fluctuations, as he himself puts it, in order “to get a quantitative idea of the importance of stabilization policy relative to other economic questions.” Lucas estimated that the welfare costs of economic fluctuations are very insignificant; merely 0.05 percent of consumption per capita. A number of recent studies, however, have questioned this finding. Reis (2006) found that the welfare cost of macroeconomic volatility is significantly higher than what Lucas had calculated. Reis estimated that the costs of eliminating the uncertainty that induces macroeconomic volatility are between 0.5 and 5 percent of per capita consumption. He explains that such a significant welfare loss is caused by its impact on precautionary savings and investment. Reis calibrated his model using the U.S. data. In terms



of nominal value, 5 percent of household consumption could represent more than US\$ 450 billion,<sup>1</sup> which is a substantial cost for the society.

Pallage (2003) argued that the welfare costs of macroeconomic volatility are substantially larger in poor countries than in the United States. Using several models, including Lucas' (1987), he computed the welfare cost of aggregate fluctuations in LICs and then contrast these costs with estimates obtained from the same models using US data. Pallage found that the median welfare cost of business cycles in LICs typically range from 10 to 30 times its estimate for the United States. He also emphasized that for poor countries "the welfare gain from eliminating aggregate fluctuations may in fact be so large as to exceed that of receiving an additional 1% of growth forever." Although Pallage's estimates cannot be taken as an *absolute* welfare cost of macroeconomic instability in LICs, what is certain is that its welfare loss is much larger in poor countries than in the advanced economies. In fact, macroeconomic volatility disproportionately affects the poor because consumption patterns are much more sensitive to fluctuations in income at low levels of income.

These recent findings may suggest a re-thinking of economic policies in poor countries. Washington-based international institutions have always recommended developing countries the policies which focused exclusively on generating growth. Yet not many countries succeeded to obtain long-term stable growth. Despite landmark achievements in economic theory, economists have not yet been able to offer an ultimate solution for countries which suffer from growth-retarding characteristics (Easterly, 2002). A fair approach would be to accompany growth-enhancing policies with measures that aim to smooth out economic fluctuations and to bring about macroeconomic stability in the country.

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<sup>1</sup> According to OECD Statistics, final consumption expenditure of households in the United States was \$9,742.5 billion in current USD as of 2009. Five percent of which is \$487 billion.

### **3. Sources of macroeconomic instability**

Empirical studies have identified numerous factors which may induce volatility in macroeconomic aggregates. These factors are of different nature, and I classify them henceforth under *exogenous* and *endogenous* factors. By these two terms I do not imply that they are “external” or “internal” factors in regard to the economy, but whether these factors can be controlled by the government and can be influenced by economic policies and structural reforms. I rely on the results of empirical studies in my approach to enlist the sources of volatility. A large part of these studies use econometric models and techniques to identify the causes of macroeconomic volatility. Nonetheless, other studies are based on the calibration of theoretical models (e.g. general equilibrium models, dynamic stochastic models, etc.) which I do not develop in detail, rather I focus directly on their estimation results.

#### **3.1. Exogenous factors**

##### ***(i) External and terms-of-trade shocks***

External shocks have significant impact on macroeconomic instability in small open economies. Above all, the terms-of-trade shocks (fluctuations in the relative prices of exports to imports) are believed to be more pronounced because most small developing countries are price takers in international markets. Some of these countries have very low level of domestic production; not only low manufacturer output but also insufficient agricultural production. They are heavily dependent on imports; on imported capital goods, intermediate inputs, and on primary food and non-food commodities. Therefore, world price shocks affect these countries much severely. Moreover, these countries export only few primary commodities, and rely heavily on their export earnings for the payment of their large foreign debt services. Their export revenues are also highly unstable due to recurrent and sharp fluctuations in world demand and prices, which make these economies more and more vulnerable. Given such structural characteristics, it is easy to conclude that small open developing countries are much prone to external shocks, especially to shocks in their terms of trade.

Empirical studies have supported the fact that terms-of-trade shocks account for a significant portion of macroeconomic volatility in developing countries. Mendoza (1995) found that terms-of-trade disturbances explain 56 percent of output fluctuations in developing countries. Kose and Riezman (2001) estimate that terms-of-trade shocks account for almost half of the volatility in aggregate output in Africa. Kose (2002) modelled a small open economy under a dynamic stochastic model, and by using a variance decomposition method,

he estimated that “world price shocks account for a significant fraction of business cycle variability in developing countries.”

Broda (2004) discriminated between fixed and floating exchange rate regimes in his study, and concluded that short-run real GDP volatility in response to terms-of-trade shocks is smaller in countries with flexible exchange rate regime (floating) than in those with fixed regime (pegs). He estimated that in developing countries, terms-of-trade disturbances explain 30 percent of real GDP fluctuations in fixed exchange rate regimes compared to 10 percent in flexible exchange rate regimes. Although a few other studies have concluded that the level of impact of external shocks on output volatility might be lower (cf. Raddatz, 2007), nonetheless, there is no doubt that “exogenous volatility spillovers from abroad” are “a relevant determinant of output volatility” (Bandingier, 2010).

The principal transmitting channels of external shocks are trade and financial integration. Countries more open to the world economy, which lack sufficient domestic production of primary commodities, tend to be more vulnerable to external shocks; given the fact that most of world price fluctuations occur in primary commodities, in both food and non-food (e.g. oil) items. Financial integration, on the other hand, makes countries more prone to global financial shocks, credit restraints, and world interest rate fluctuations. The level of specialisation of a country also plays an important role in determining the impact of external shocks. Countries more diversified, both in their export and production structures, will be able to decrease the negative effects of external shocks. These structural factors which determine the impact of external shocks over an economy will be discussed more in detail in section I.3.2.

The above arguments concerning external or terms-of-trade shocks were in two directions. On the demand side, large “importers” are more vulnerable because they do not have domestically-produced substitutes. And on the supply side, “specialized exporters” are also prone to the fluctuations in world commodity prices because they are price-takers at the global level. A special case in the latter category is the resource rich developing countries. Countries abundant in natural resources experience large volatilities especially in their fiscal indicators, because a large part of their revenues is based on their commodity exports. In periods of booming prices of commodities (e.g. oil), countries receive large surpluses and rents from their commodity exports. As Collier (2008) explains, in booming periods, they plan large investment projects for the short- and medium-run, and increase their government expenditures. But when the commodity prices fall, there is a sudden drop in fiscal revenue, and the government can no longer continuously finance its projects which are in the course of

implementation. Moreover, once the government increases its expenditures, it cannot easily reduce it back due to political and social constraints. Hence, in the periods of falling commodity prices, the resource-rich developing countries which do not have good fiscal management experience large fluctuations in their fiscal indicators (e.g. enlarging fiscal deficit, increasing tax rates, or decreasing public expenditures). Fiscal fluctuations will also cause volatility in other macroeconomic aggregates via the consumption channel, as households quickly adjust their behaviour to falling wages or decreasing employment.

### ***(ii) Supply-side shocks***

Supply-side shocks, such as productivity or climatic shocks, contribute significantly to output volatility in developing countries. Hoffmaister and Roldós (1997) studied macroeconomic volatility in Asian and Latin American countries, and concluded that supply-side shocks play a substantial role in explaining output volatility “even in the short-run.” Kose (2002) estimated that productivity shocks explain 10 to 20 percent of sectoral output volatility in small developing countries.

Agriculture-dependent countries which have not yet achieved a agricultural intensification are much vulnerable to climatic shocks. The irrigation system in these countries is not well developed, and their agricultural output is heavily dependent on climate conditions. Modified agricultural seeds which are flood-resistant and drought-tolerant are not widely used among the farmers. Therefore, climatic shocks, such as drought, flood or other natural disasters, have more adverse effect in these countries than in developed economies.

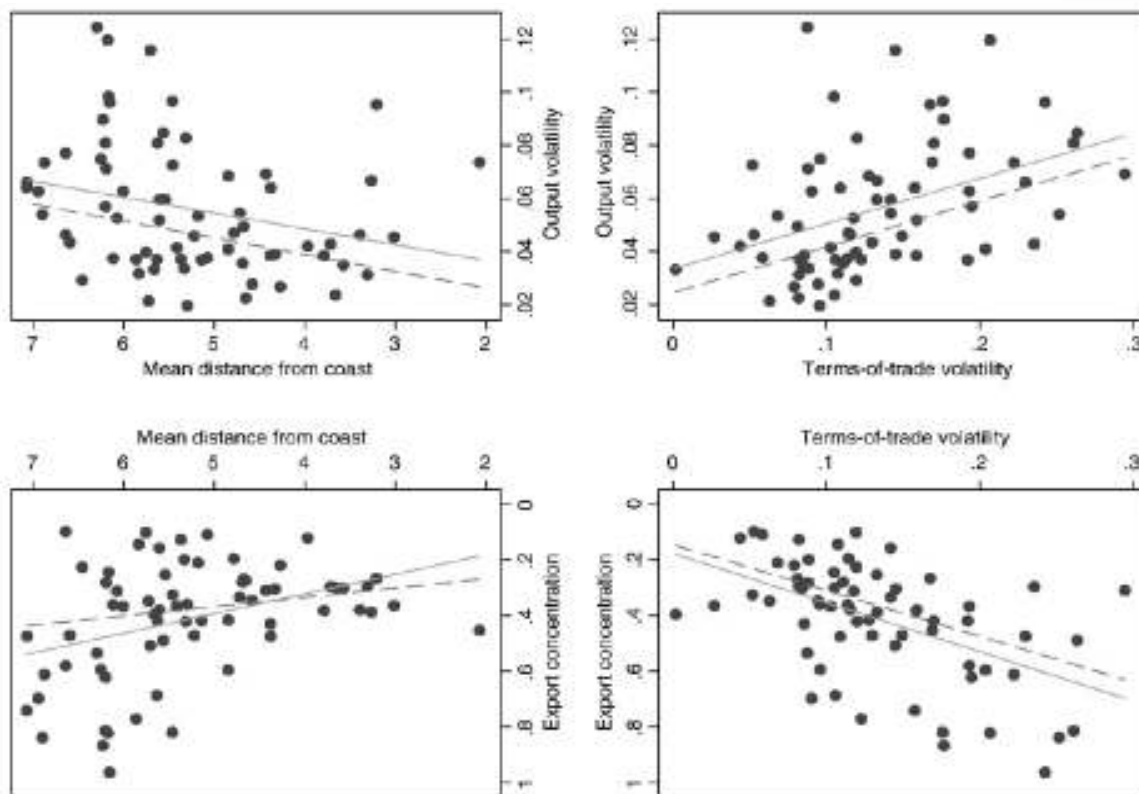
### ***(iii) Geography and market access***

Malik and Temple (2009) investigated the volatility effects of market access (proxied by coastal access), geographic predisposition to trade, climate variability, soil conditions, and ecological classifications of tropical location. They found an especially important role for market access: “remote countries are more likely to have undiversified exports and to experience greater volatility in output growth.” In fact, natural barriers to trade (such as being located far from international markets or having costly access to markets, for example, due to being landlocked and not having an easy access to sea) may lead countries to specialize in a narrow range of exports. This could explain the association in the cross-country data between coastal access, export concentration, exposure to world price shocks, and output volatility, as shown in Figure 1.7. Landlocked countries and/or countries with greater coastal distance tend to have more concentrated exports and thus experience higher volatility. Natural-resource

abundance is also associated with export concentration. Countries abundant with and dependent on point-source natural resources (such as fuels, minerals and plantation crops) have higher degree of exportation concentration, hence higher growth volatility.

Malik and Temple's (2009) argument is that geographic location influences the prices of intermediate inputs faced by domestic producers, and especially the prices of capital goods, due to high transportation costs. Output growth, thus, tends to be more volatile in countries situated in remote geographical areas. This phenomenon was confirmed in an earlier paper by Brunner et al. (2003) who showed that countries with higher trade costs may experience more volatile real exchange rate and volatile output growth. Malik and Temple (2009) also controlled for the countries' institutions in their regressions and found that "even when conditioning on institutional variables, geographical characteristics continue to play an important role in explaining volatility."

**Figure 1.7: Geographic location, specialisation, ToT volatility, and output volatility**



Source: Malik and Temple (2009)

"A first look at the geography of output volatility. The top-right panel shows the well-known association between volatility and terms-of-trade volatility. Reading the remaining figures clockwise, volatility in the terms of trade is related to export concentration (lower-right) which is related to mean distance from the coast (lower left) and hence mean distance from the coast and output volatility are positively associated (top-left). The solid line is a least-squares fit, the dashed line a robust (least trimmed squares) fit." (description by the authors)

#### ***(iv) Social fragmentation***

Rodrik (1999) studied the question that ‘why some economies were hardly affected by the volatility in their external environment during the second half of the 1970s, while others suffered extensively for a decade or more before starting to recover.’ To answer this, he advanced the hypothesis that domestic social conflicts are key to understanding this phenomenon. He emphasized that “social conflicts interact with external shocks on the one hand and the domestic institutions of conflict management on the other.” These interactions play a central role in determining an economy’s response to volatility in the external environment. “When social divisions run deep and the institutions of conflict management are weak, the economic costs of exogenous shocks – such as deteriorations in the terms of trade – are magnified by the distributional conflicts that are triggered.” In fact, social divisions generate uncertainty in the economic environment, and delay the required adjustments to correct the disequilibria created in the economy. Policy-makers who belong to different ethnic groups will not be able to reach an agreement on bringing necessary structural reforms, or to take effective measures to respond to external shocks. Hence, countries which suffer from social divisions experience stronger volatility effects.

In a complementary but independent study, Tornell and Lane (1999) analysed an economy characterised by weak legal-political institutional infrastructure and by “fractionalization” inside the government elite. They focused on a fiscal process in which powerful groups dynamically interact and maintain discretionary fiscal redistribution to allocate national resources for themselves. “In equilibrium, this leads to slow economic growth and a “voracity effect,” by which a shock, such as terms of trade windfall, perversely generates a more-than-proportionate increase in fiscal redistribution and reduces growth.” The authors also note that the governments of such countries would respond in the same perverse fashion *even* in the case of favourable shocks, by increasing more than proportionally fiscal redistribution and investing in inefficient capital projects. They explain that in a society in which non-cooperative powerful groups exist, the “redistributive struggle” between them will result in a greater share of resources being invested in non-taxable inefficient activities. In fact, when groups have the power to extract fiscal transfers, due to lack of institutional barriers, such redistributive transfers would be invested in shadow sectors in order to protect their profits from arbitrary taxation.

### ***(v) Aid volatility***

Volatile aid inflows, too, can be a source of macroeconomic volatility in low-income countries (LICs), especially when aid is in the form of budget support rather than project support. Empirical studies have found that aid flows are usually volatile and pro-cyclical (Pallage and Robe, 2001) and such volatile pattern in aid inflows can have significant negative impact on the variability of macroeconomic aggregates through fiscal indicators. Aid is observed to be more volatile than domestic revenues, and is rarely stabilizing. In fact, “unpredictable and procyclical aid can heighten the overall macroeconomic instability” (Buliř and Hamann, 2008). Arellano et al. (2009) argue that aid volatility induces strong fluctuations in consumption, investment and real exchange rates. They explained that even in the absence of aid, large productivity fluctuations typical of aid-dependent countries introduce high volatility in all macroeconomic aggregates. And when the country receives foreign assistance, aid volatility further exacerbates these macroeconomic fluctuations.

The above arguments focus only on *volatile* aid flows. Nevertheless, economists have also emphasised that large aid inflows, in general, can have “Dutch disease” effects. Foreign aid is partially spent on nontradable goods, and, as a consequence, domestic prices increase, which leads to a real exchange rate appreciation. In turn, factors of production (including labour) will be re-allocated to the nontradable goods sector, which will result in a decline in the output of tradable sector compared to the output of nontradable sector. Export competitiveness will deteriorate and it will have an adverse effect on growth (Agénor, 2004). Thus, foreign aid contributes to macroeconomic instability by appreciating the real exchange rate, and enlarging the trade deficit. Furthermore, foreign aid may damage fiscal sustainability of the recipient country, by decreasing the incentives to implement fiscal and tax reforms. It also weakens macroeconomic stability through “shifting political attention at the margin towards the creation of an ‘enabling environment for aid’ which may not be the same thing as enabling environment for sustainable private sector led growth” (DFID, 2004). Government will focus on effective management and efficient allocation of foreign aid in the country, and will divert its attention from seeking potential sources of long-term stable growth. Hence, foreign aid affects macroeconomic stability by weakening the *institutional capacities* which ensure sustainable growth.

### **3.2. Endogenous factors**

Classifying the sources of macroeconomic volatility as *exogenous* and *endogenous* factors is, in a way, “imperfect.” Although various factors explained in the earlier section

seem to be exogenous – meaning they cannot be controlled or influenced by the government – but, in the long-run, they turn out to be endogenous. For example, although can be treated as exogenous, “exposure to terms-of-trade shocks depends on import and export structures, which are endogenous in the long-run” (Malik and Temple, 2009). The government can modify its trade structure in the long-run by implementing necessary structural reforms or by diversifying its export structure, and, as a result, decrease the economy’s exposure to external shocks. The degree of exposure to shocks (whether external or internal) are thus a function of an economy’s structural characteristics and are partly determined by the complex effects that a choice of policy regime – although subjected to constraints in the economy – may have in the long-run. It also relates to the manner in which economic agents cope with the shocks. In fact, vulnerability to aggregate shocks is determined by the extent to which individually rational actions of firms and households, and the policy intervention of governments, add up to collective behaviour which whether responds effectively to these shocks and brings the economy back to the equilibrium, or not. In this context, “the shocks themselves are, to some extent at least, endogenous” (Easterly et al. 2000).

We now turn to the factors which are conceived to be *directly* endogenous, at least in the medium-run. There has been extensive research recently on the fact that the impact of external shocks is determined by the country’s own structural characteristics. The underlying idea is to verify whether a country’s vulnerability to shocks is not purely random but linked to the domestic conditions (Loayza and Raddatz, 2006). In this section, we will look over the concerning structural characteristics that are believed to influence the impact of shocks on the real economy.

### ***(i) Financial integration and depth***

There has been a wide range of theoretical and empirical studies on how financial development and liberalisation affects macroeconomic stability. There is general consensus that financial *deepening*<sup>1</sup> reduces macroeconomic instability, while there is no unique agreement on the impact of financial *integration* on macroeconomic instability.

Aghion, Bacchetta, and Banerjee (2004) proposed a framework for analysing the role of financial development and integration as a source of instability in small open economies. They showed that “economies at an intermediate level of financial development are more unstable than either very developed or very underdeveloped economies.” Temporary shocks in countries with intermediate level of financial depth will have larger and more persistent

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<sup>1</sup> Technically, financial deepening (or depth) refers to seeking a positive *real* growth for the financial sector; i.e. growth in the share of liquid assets to GDP.



effects on the real economy. The authors explain that: at very high levels of financial development, most firms' investment is not constrained by cash flow, so shocks to cash flow are irrelevant. On the other hand, at very low levels of financial development, firms cannot borrow enough in any case and therefore their response to cash-flow shocks will be rather muted. Shocks will, therefore, die out without causing any great turmoil. It is then at intermediate levels of financial development that shocks to cash flow will have an effect to be intense enough to cause instability.

The assessments made in the earlier paragraph do not suggest, however, that countries which are at their early stage of financial development are totally safe from the adverse effects of temporary shocks to financial sector. In fact, in countries with serious capital market imperfections, where investors have unequal access to capital and to investment opportunities, endogenous and permanent fluctuations are likely to appear in aggregate GDP, investment, and interest rates (Aghion, Banerjee and Piketty, 1999). Economies with less developed financial sector and more capital market imperfections tend to grow more slowly and fluctuate around their steady-state growth path – in other words, experience more growth volatility.

Concerning financial integration, Aghion and Banerjee (2005) emphasized that in countries at intermediate level of financial development “an unrestricted financial liberalization may actually *destabilize* the economy” and engender volatility in the short-run that would otherwise not have happened. Thus, fully liberalising the capital account may not be a good idea at least until the domestic financial sector is sufficiently well developed. Agénor and Montiel (2008), as well, agree that “greater integration with international financial markets exposes many middle-income countries to abrupt reversals in capital flows, which may exacerbate macroeconomic volatility.”

However, Loayza and Raddatz (2006) found ambiguous results on the impact of financial opening and depth on macroeconomic stability. They found that financial integration reduces the impact of external shocks, while domestic financial depth has a more nuanced role in stabilizing the economy. But when they allowed for the interaction between financial development and financial openness in their model, they found that financial development reduces the impact of external shocks only in countries with higher financial integration, but will have an opposite effect when financial openness is low. This result shows a complementarity between bringing reforms in domestic financial system and seeking more financial integration. The authors concluded that “higher financial openness in an environment of underdeveloped local financial markets may result in an increase in the

impact of external shocks. In contrast, when financial openness occurs in a country with well developed financial markets, the impact of the shocks is reduced.”

## ***(ii) Trade openness***

Loayza and Raddatz (2006) found that larger trade openness magnifies the output impact of external shocks, particularly the negative ones. They observed that “larger trade openness appears to increase the cumulative impact of terms-of-trade shocks.” More trade openness means larger trade volume and, in turn, translates into a magnifying mechanism for terms-of-trade shocks. The authors estimated that the output impact of a one-standard-deviation terms-of-trade shock is 1.4 percentage point higher at the third quartile of trade openness than at the first quartile. Nevertheless, the impact is considerably smaller when the expansion in openness occurs in a country with well developed local financial markets. Kose et al. (2006) affirmed that “in a regression of growth on volatility and other controls, the estimated coefficient on the interaction between volatility and trade integration is significantly positive.”

Giovanni and Levchenko (2006) studied an industry-level panel dataset of 59 countries, with 28 manufacturing sectors, over the period 1970-99, and analysed the mechanisms through which trade can affect the volatility of production. They found that trade openness is positively correlated with volatility at the industry level. Once exports and imports are treated separately, their results show that importing in a sector increases volatility more than exporting. Quantitatively, they estimated that a one-standard-deviation increase in trade openness raises aggregate volatility by about 15 percent of the average aggregate variance. In fact, when an economy is open to international trade, an industry is more vulnerable to world supply and demand shocks. Trade openness increases overall volatility because it leads to specialization and thus a less diversified production structure.

In a distinct approach, Razin et al. (2003) evaluated the impact of trade openness through the adjustment costs of investment. They emphasized that, in the presence of economies of scale trade, openness may cause volatility in the setup cost of investment, through changes in the terms of trade, and thereby may generate instability in the form of “boom-bust investment cycles,” supported by self-fulfilling expectations. In a period of ‘good’ terms of trade with lower setup costs of investment, the country will experience a boom in the investment cycle, while in a period of ‘bad’ terms of trade the investment cycle will see a decline due to increasing higher setup costs. In developing countries, firms face relatively higher setup costs due to inadequate infrastructure (communication, transportation,

etc.) and scarce skilled labour. Trade openness in such countries will, thus, generate more pronounced oscillations in the investment cycles, compared to developed countries.

### ***(iii) Diversification***

The trade structure of a country plays a major role in transmitting external shocks, especially the terms-of-trade shocks; it can whether amplify or downplay their effects. Many economists have emphasized that less diversified economies face higher risk of external shocks (Acemoglu and Zilibotti, 1997; Koren and Tenreyro, 2006, 2007; Stiglitz et al., 2006; Giovanni and Levchenko, 2006; Malik and Temple, 2009; Haddad et al., 2010). External shocks can affect an economy through both exports and imports. On the one hand, exporting countries with higher specialization and higher concentration in their exports depend heavily on the revenue gains from their few exporting items (whether primary or manufactured goods). In this case, a drop in world prices (or in world demand) will severely affect their economies: a decline in production and employment, and a possible drop in fiscal revenues. On the other hand, countries which do not have sufficient domestic production and rely heavily on imported intermediate and final goods to satisfy their domestic demand are also much vulnerable. An increase in world prices will strongly affect their economies through generating inflation and decreasing the purchasing power of the households. Therefore, we are not only concerned with the level of diversification in the export structure but also in the economy's production structure. Less diversified economies are faced with higher uncertainty and risk, and suffer from higher welfare losses following a shock to their external environment. In contrast, higher diversification will minimise the risks of and vulnerability to external shocks.

Haddad et al. (2010) noted that the effect of trade openness on growth volatility reduces with the degree of export diversification, both across products and markets. According to them, not only product diversification (number of goods exported) but also market diversification (number of destination markets) play an important role in moderating the volatility effects of trade openness on growth. Malik and Temple (2009) found that terms-of-trade volatility is strongly associated with a lack of export diversification, which is shown in Figure 1.7, the bottom right panel. Giovanni and Levchenko (2006) explained that "some countries specialize systematically in more or less risky sectors." They studied the risk content of a country's export pattern and estimated that increased specialization contributes by 7.5 percent in output volatility.

In a pioneering paper, Acemoglu and Zilibotti (1997), henceforth AZ, using a neo-classical growth model augmented with micro-level uncertainties and non-convexities showed that less developed economies are more volatile because they are unable to diversify idiosyncratic risks. At the early stages of development, owing to the scarcity of capital and to the fact that a large number of undertaken projects is subject to indivisibilities in the form start-up costs, countries can only finance a limited number of projects and invest in safer but less productive sectors. This drawback limits the scope for risk diversification in these economies and will make their earlier stages of development highly random and uncertain. The main idea in AZ model is that, in fact, “better diversification opportunities enable a gradual allocation of fund to their most productive uses while reducing the variability of growth.” The process of development in the AZ model goes through several stages: first, a lengthy period of “primitive accumulation” with highly volatile output; second, a take-off phase with stronger financial deepening which widens the scope for diversification; and finally, a developed phase with a steady growth.

Koren and Tenreyro (2006) developed an endogenous growth model of “technological diversification” to explain output volatility in the early stages of development. The key idea in their model is that, as production uses different inputs which are subject to imperfectly correlated shocks, “firms using a larger variety of inputs can mitigate the impact of shocks affecting the productivity of individual inputs.” In fact, countries accumulate new inputs as they develop, and more input varieties will be directed towards sectors in which they have a comparative advantage. This makes sectoral output less volatile and reduces volatility in the aggregate level. Thus technological progress instinctively decreases growth volatility. In a second paper, Koren and Tenreyro (2007) decomposed aggregate volatility in three components: sectoral shocks, country-specific shocks, and country-sector covariance shocks. They argued that poor countries are more volatile because they specialise in fewer and more volatile sectors which carry high sector-specific risks. Almost 50 percent of the differences in volatility between poor and rich countries can be accounted for by difference in the sectoral composition of the economy (higher concentration and sectoral risk).

#### ***(iv) Distortionary macroeconomic policies and policy instability***

Various studies have found that distortionary macroeconomic policies (such as pro-cyclical fiscal policy, distorted foreign exchange market, etc.), economic mismanagement (such as large budget deficits, inefficient monetary policy to contain inflation, unsustainable external position, etc.), and policy instability contribute to macroeconomic volatility (Fischer,

1993; Bleaney, 1996; Easterly, Islam and Stiglitz, 2000; Fatás, 2005; Loayza and Raddatz, 2006; Raddatz, 2007; Loayza et al., 2007).

However, some economists are sceptical that macroeconomic policies can have a determining effect on macroeconomic stability (Acemoglu et al., 2003; Easterly, 2005). According to the latter, distortionary macroeconomic policies are more likely to be the “symptoms of weak institutions” rather than the main causes of economic volatility. Once institutions are controlled for in the regressions, macroeconomic policies turn out to be having insignificant effect on macroeconomic volatility. Fatás (2005) while confirming the latter viewpoint maintains, however, that only policy *volatility* has a determinant effect on macroeconomic performance. It is not the levels of policy variables, but in fact it is the volatility in policy variables which affects growth stability.

#### **(v) *Weak institutions***

Recent studies have argued that institutions play a larger role in enhancing macroeconomic stability than what previously thought. In fact, institutions interact with external and exogenous shocks and determine the magnitude of their impact on various macroeconomic variables. Strong and efficient institutions create risk-management mechanisms against exogenous and external shocks, and reduce their negative impact on the economy. However, when institutions are weak, the volatility impact of exogenous shocks is magnified by the distributional conflicts that are triggered in the society (Rodrik, 1999). Therefore, the weaker the institutions, the larger the effect of shocks on the economy. Weak institutions may refer to poor rule of law, political institutions that do not constrain politicians and political elites from rent-seeking or from expropriating the resources, ineffective enforcement of property rights for investors, widespread corruption, ineffective judiciary system, high degree of political instability, non-democratic rights, absence of or inefficient social safety nets, etc.

In an influential paper, Acemoglu et al. (2003) sought to document a relationship between the historically determined component of post-war institutions and volatility. They argued that “countries that inherited worse (‘extractive’) institutions from European colonial power are much more likely to experience high volatility and severe economic crises.” Countries with poor institutions not only grow slower in the long-run, but also experience greater volatility and other worse macroeconomic outcomes. One of the main arguments in their paper is that:

“... standard macroeconomic variables, often blamed for economic crises and volatility, play a relatively minor role. ... These macroeconomic variables, with the possible exception of exchange rate misalignment, do not appear to be a major mediating channel through which institutions affect economic outcomes. Weak institutions appear to create macroeconomic problems via a variety of microeconomic as well as macroeconomic channels.”

In fact, in institutionally weak societies, elites and politicians will find various ways of “expropriation” of resources, ranging from microeconomic to macroeconomic instruments. In such societies, economic cooperation is based on “trust,” and contractual agreements are more imperfect. Shocks, in this case, may make it impossible to sustain cooperation and will lead to output collapses. Furthermore, with weak institutions, entrepreneurs may choose sectors or activities from which they can withdraw their capital more quickly following a perceived shock, thus further contributing to the economic instability.

Unlike Rodrik’s (1999) thesis according to which institutions interact with exogenous shocks to then determine the nature and magnitude of their impact on the variability of macroeconomic indicators, Acemoglu et al. (2003) argue that the proximate affecting channel between institutions and volatility is not primarily the propensity of institutionally-weak societies to run into crises during the periods of global recession, “instead it is likely that it is the inability of institutionally weak societies to deal with *their own idiosyncratic economic and most likely political problems* that underlies their economic instability” (emphasis by the authors).

Other empirical studies have also identified strong relationships between institutions and economic volatility. Malik and Temple (2009) observed that “countries with weaker institutions tend to be more volatile.” They concluded that “geography and institutions are both important. Once combined, they can explain as much as two-thirds of the international variation in volatility.” Klomp and de Haan (2009) examined the effect of political institutions on economic growth volatility and found that “democracy reduces economic volatility”, while “some dimensions of political instability and policy uncertainty increase economic volatility.” Tang et al. (2008) identified technological progress (“technical change”) as a mediating channel between institutions and macroeconomic volatility. The authors explain that technological progress is an important stabilizing force of macroeconomic volatility, and at least part of the stabilizing force of technical change originates from strong institutions.

### ***(vi) Microeconomic rigidities***

Modern macroeconomics (i.e. New Keynesian macroeconomics) is based on competitive equilibrium models in which microeconomic foundations (such as imperfect competition, price rigidity, real wage rigidity, credit rationing, etc.) have been introduced. According to this latest theory and literature, fluctuations in output are generated by changes in inputs (e.g. labour or capital) or in prices of inputs (e.g. wage or prices) or in technology. However, empirical studies have given mixed results in support of these theoretical models. Easterly, Islam and Stiglitz (2000) – while comparing OECD and low-income countries – found “neither evidence for those who claim that wage-price rigidity is the problem causing fluctuations, nor for those who argue that wage-price volatility increases output volatility through demand effects.” A possible explanation is that there are demand effects of wage adjustments, and the adverse effects of these may offset the positive effects arising from wage flexibility. Nonetheless, if the explanations of these theoretical models for output fluctuation are based on price and real wage rigidity, then these models fail to explain why output in LICs is more volatile than that in advanced economies, yet real wages are more flexible in the former (Easterly, Islam and Stiglitz, 2000).

Some empirical studies by economists at the World Bank have found that microeconomic regulations hamper adjustment to shocks by restricting the economy’s ability to reallocate resources in response. Microeconomic regulations such as product market, labour and fiscal regulations lead to higher macroeconomic volatility (Loayza et al., 2004). Similarly, improvements in market labour flexibility reduce the impact of terms-of-trade shocks on per capita income. In this case, “the ability of firms to adjust their activities on the labor margin seems crucial for the economy to accommodate the shock” (Loayza and Raddatz, 2006).

## 4. Macroeconomic instability and development

In the previous section, we looked at various potential sources of macroeconomic instability, both internal and external sources, and we examined how these “exogenous” factors interact with the structural factors in the economy to induce and exacerbate macroeconomic volatility. In fact, these explanations are not mutually exclusive, and may interact in various ways. Figure 1.8 illustrates the interactions and links among different factors which induce macroeconomic volatility. The effects of external (such as terms-of-trade shocks or aid volatility) and internal shocks (such as climatic shock or productivity shocks) are determined by the structural features of the economy which act as a risk-management mechanism. Well-developed financial sector, well-managed capital-account liberalization, higher export and production diversification, lower market-access costs, strong and efficient institutions, and “good” policies may decrease the negative effects of exogenous shocks. Hence, at early stages of development, countries normally have underdeveloped structures, and this allows for the exogenous shocks to generate strong oscillations in the macroeconomic variables. As countries advance in their development path and acquire the structural characteristics mentioned earlier, exogenous shocks will leave less impact on the economy, and the macroeconomic environment becomes more and more stable.

As outlined in the earlier sections, macroeconomic instability is an endemic phenomenon in developing countries. It has become a first-order issue of interest in development macroeconomics in recent years. But is macroeconomic instability a source of underdevelopment or is it a permanent feature of poor countries? Because what matters to the researchers in the field of development economics is to be able to identify the causes of macroeconomic volatility and to define the nature of interaction between macroeconomic instability and underdevelopment, so that policy-makers in developing countries, in their turn, could influence their macroeconomic environment by adopting relevant strategies, policies and instruments.

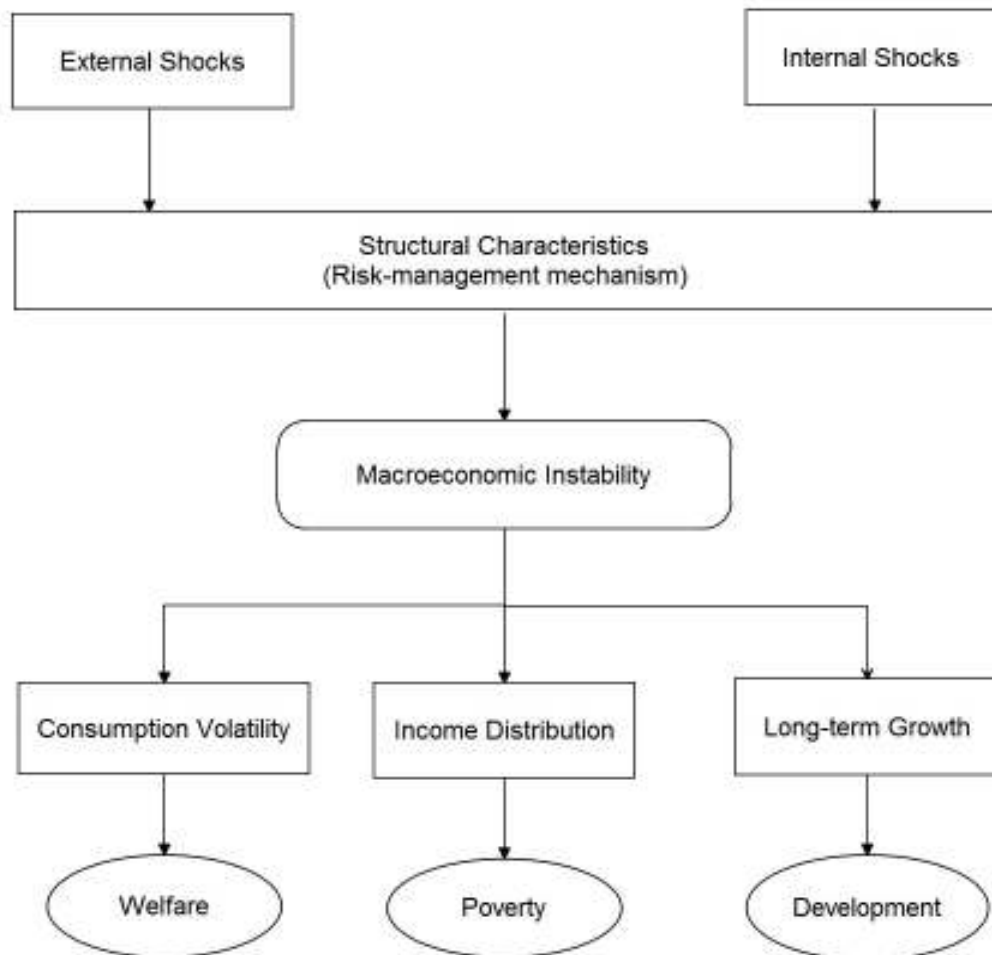
The answer to this question is that macroeconomic instability is both a source and a reflection of underdevelopment. On the one hand, when macroeconomic instability is not promptly overhauled, it holds the country back in underdevelopment as it will not allow for an enabling environment for long-term stable growth which is a necessary condition for development and poverty reduction. In the presence of macroeconomic instability, the country will not be able to exploit efficiently its potentials for sustainable growth, and economic agents will not be encouraged to engage in productive long-term activities and investments. Furthermore, macroeconomic instability will push the economy into a series of



economic crises which will allocate resources in the economy for ‘exit strategies from crises’ instead of allocating them for efficient development strategies. On the other hand, macroeconomic instability is a product and a feature of underdevelopment, too. As stated earlier, countries experience macroeconomic instability at their early stages of development. Macroeconomic instability is the result of co-existence of various ‘underdeveloped structures’ in the economy. Until these underdeveloped structures, such as weak institutions, market distortions, financial underdevelopment and undiversified production and trade structures, exist in the economy and are not tackled properly, macroeconomic instability is a long-lasting phenomenon.

At the policy-making level, the recognition of this idea has important implications. On

**Figure 1.8: Conceptual Framework**



the one hand, it implies that an important part of the strategy to get a country out of underdevelopment should be to deal seriously with the existing macroeconomic instability in the country. Possessing a stable macroeconomic environment is a necessary condition for the

effectiveness of development policies. On the other hand, it also implies that macroeconomic instability cannot be tackled immediately and the outcome of adopted policies can only be observed in the long-term. All short-term stabilisation policies aimed at improving macroeconomic instability are, in fact, aimed at *shortening the period of instability* instead of avoiding it. Therefore, short-term stabilisation policies aimed at influencing macroeconomic instability must be accompanied with long-term structural and development policies. Only with a mix of development, structural and stabilisation policies can the government install macroeconomic stability in the country. Adopting uniquely stabilisation policies will have no long-run effect as it only fixes the disequilibria temporarily, and shocks will regenerate after a certain period.

Hence, the second part of this dissertation will present a practical methodology on how to choose the ‘right’ and effective policies and strategies to correct macroeconomic instability in a country.

## Part II. Case study: Afghanistan

In this part, I will study macroeconomic instability in Afghanistan. My approach will be of a diagnostic one. First, I will identify the causes and sources of instability in Afghanistan, and secondly I will propose a series of policies and structural reforms in order to overcome macroeconomic instability and to stabilise the economy.

### 1. The Afghan economy

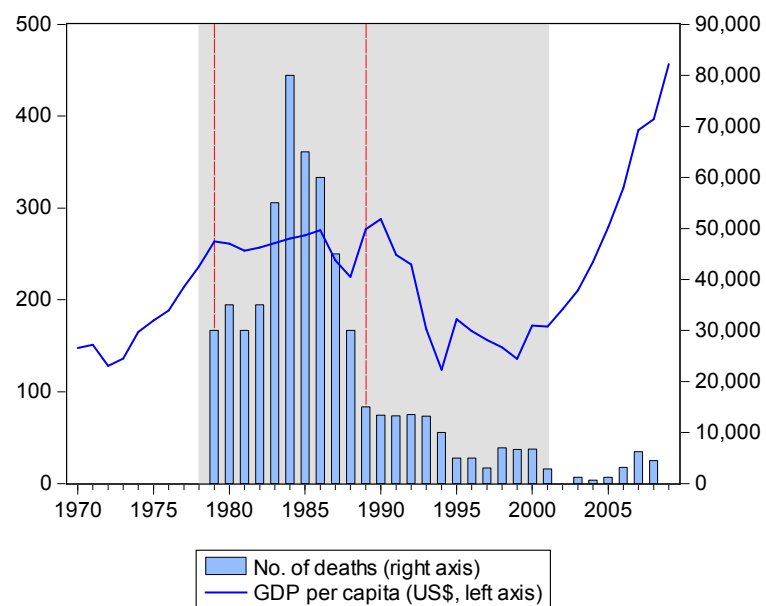
#### 1.1. Recent economic history

Until the end of the Second World War, the Afghan economy was oriented around the private sector and was relatively unregulated. However, between 1950s and 1990s the economic system was defined as a centrally-planned economy. The economy started to be further regulated and planified under the administration of Mohammad Daoud Khan (1953-1963 as Prime Minister, and 1973-1978 as President), and moved towards a socialist system in the subsequent years of communist regime till 1992. The civil war started in 1979 with the Soviet invasion (1979-1989) and ended with the fall of Taliban in 2001. Over twenty years of civil conflict and political crisis affected severely the physical, institutional, social and economic structures in the country. Although, even prior to the civil war, Afghanistan was one of the low-income

countries in the world, its GDP per capita in 1979 stood higher than that in 2004 (see Figure 2.1). Only in 2005 had Afghanistan succeeded to attain its pre-war level of per capita income.

Table 2.1 makes a regional comparison of GDP per capita between 1960 and 2009. An interesting fact to note is that Afghanistan's GDP per capita in 1978 was

**Figure 2.1: GDP per capita since 1970**



*Shaded area represents period of civil war; Red lines are the Soviet's invasion and withdrawal, respectively; Data sources: UNSD, and WDI (Battle-related deaths)*

slightly higher than that of India and Pakistan. Thirty years later, it is now almost half of what it is in Pakistan and in India. This shows the extent to which civil war and political crisis have cost Afghanistan in terms of economic development and how much it has to catch up with other countries.

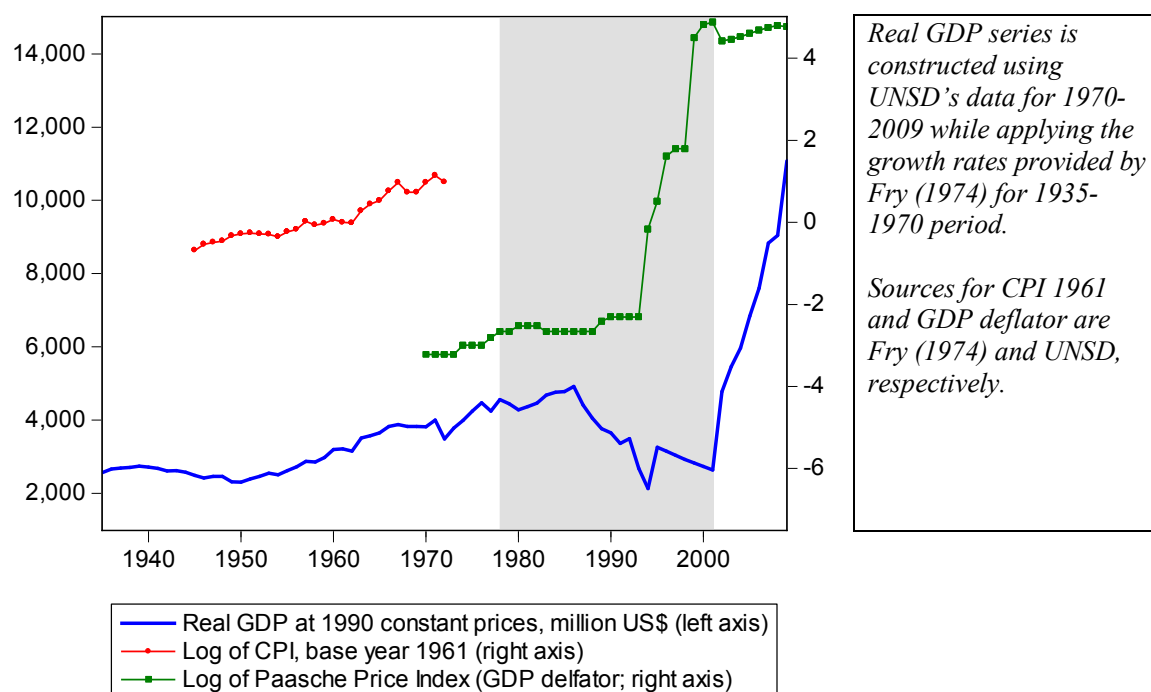
**Table 2.1: Regional comparison of GDP per capita**

	1960	1970	1975	1978	1980	2002	2009
Afghanistan	55.92	147.71	177.56	230.06	241.76	174.61	485.95
Pakistan	80.85	165.44	159.64	228.51	286.35	499.00	954.52
India	84.18	111.76	158.12	206.07	267.41	483.66	1,192.08
Iran	-	372.44	1,473.89	1,997.97	2,301.43	1,763.58	4,540.43

*In current US dollars; Source: WDI*

The trade and fiscal deficits widened dramatically during the war. Trade deficit which was 6.3 percent of GDP in 1971<sup>1</sup> soared to more than 50 percent in 2003. Fiscal deficit excluding foreign grants, which stood at 4.3 percent of GDP in 1973,<sup>2</sup> more than doubled to 10 percent of GDP in 2003. At least domestic revenues covered the entire operating expenditures before the civil war, and only part of the development budget was financed by foreign borrowing and grants. After the war in 2003, domestic revenues financed less than 50 percent of current expenditures. In addition, by late 1970s Afghanistan had attained its food

**Figure 2.2: Real GDP and Prices since 1935**



<sup>1</sup> Author's calculations based on data provided by Fry (1974)

<sup>2</sup> Author's calculations based on data provided by Fry (1974)

self-sufficiency (Nyrop and Seekins, 1986), whilst it had a total cereal deficit of 440,000 metric tonnes in 2005.

Economic growth in the pre-war period was modest and extremely volatile. The economy grew at an average rate of 2.5 percent over the period 1950-1979, and then entered into recession during the subsequent years of war. Contractions in real GDP occurred in each 4 or 5 years, caused by drought or political shocks. Table 2.2 shows the average growth rate for each decade from various sources. Since 2002, the economy has grown at a remarkable pace; the average growth rate has been well above 10 percent. As to inflation, the level of prices skyrocketed during the years of war, especially during the 1980s and 1990s, due to decreased food supply and depreciated exchange rate. Figure 2.2 illustrates the implicit GDP deflator – which is the Paasche Price Index – in logarithmic form over the period 1970-2009. As shown in the graph, the price index jumped between 1993 and 2001; it rose from an index of 0.10 to 131.81.

Although calculating the annual change in Paasche Price Index or GDP deflator is not an accurate estimator of inflation because it reflects changes not only in price but also in volume, nevertheless, the average annual inflation (based on Paasche Price Index) between 1993 and 2001 was more than 300 percent. Consequent to rising inflation, the exchange rate depreciated significantly. In September 1975, the average free market exchange rate of Afghani against the US dollar was 55 Afs.<sup>1</sup> while it reached 33,790 Afs. after the fall of Taliban in December 2001. Due to huge transaction costs, the new Afghani was effectively introduced in January 2003, replacing the old Afghani per thousand units.

**Table 2.2: Average growth rates**

	Fry (1974)	Maddison (2003)	UNSD	Penn WT
1940-50	-1.7			
1950-59	2.6	3.3		
1960-69	2.6	2.1		
1970-79		2.3	1.9	1.9
1980-89		-1.2	-1.5	-1.5
1990-2000		4.1	-1.2	1.1
2000-09			16.5	12.9

## 1.2. The economy since 2002

Subsequent to the political shift in 2002 and the adoption of a new constitution in 2004, the Afghan economy also entered a structural change. The new constitution acknowledged ‘market economy’ as the economic system and guaranteed the promotion and

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<sup>1</sup> Source: World Bank (1975)

protection of private investment (Article 10 of the Constitution). The economy has since been highly liberalized and the government has focused on a private sector-led growth. Afghanistan remains one of the most open economies to trade and investment among the LICs. It has the lowest tariff rates in the region, both among the South Asian and Central Asian countries, as illustrated in Table 2.3. Since 2002 the government has tried to lower the *tariff* and *legal* trade barriers, and this process was intensified after it agreed in 2006 to receive financial support from the IMF under the PRGF (Poverty Reduction, Growth Facilitation) programme through 2010. There remains, however, a wide range of *technical* barriers to trade such as lack of infrastructure, transport, market access and information, which can only be eliminated over a long period with public-private partnership. Being a landlocked country, Afghanistan has chosen to move towards trade integration with regional economies. It is now a member of regional economic cooperation organisations such as SAARC (South Asian Association for Regional Cooperation) and ECO (Economic Cooperation Organization), and has signed SAARC's Agreement on SAFTA (South Asian Free Trade Area) in 2008.

**Table 2.3: Degree of openness and Tariff rates in the region**

	Openness	Average applied tariff rate	Maximum duty applied	No. of MFN applied tariff lines
Afghanistan	61.7	5.6	40	5,207
India	45.8	12.8	246	11,360
Iran	43.7	26	400	6,649
Pakistan	38.1	13.9	100	6,802
Tajikistan	73.1	7.9	332	11,176
Turkmenistan	111.9	...	...	...
Uzbekistan	72.9	15.9	787	10,985

Sources: PENN WT (for openness) and WTO Tariff Profiles 2010 (for other indicators)

Note: All data is as of 2009, with the exception of tariff-related indicators for "Afghanistan" which are as of 2008.

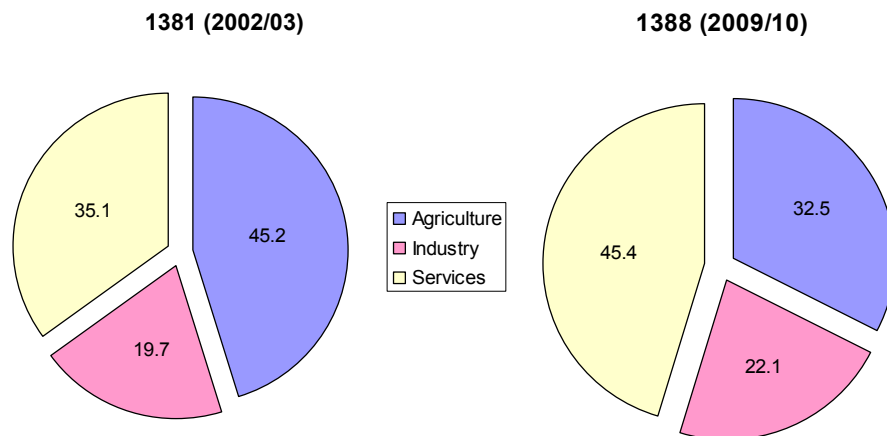
Under IMF's PRGF programme, now named ECF (Extended Credit Facility), an early vague of privatisation was carried out. Three state-owned banks were liquidated and seven other state-owned banks and public enterprises were partially or totally restructured in order to be possibly privatised in the future.<sup>1</sup> Nevertheless, the Afghan economy remains less regulated and the private sector has grown remarkably since 2002. In fact, more than two decades of war already eliminated the regulatory structures and mechanisms in the economy, as one author puts it, "the Afghan economy is largely unregulated and informal – there does

<sup>1</sup> Liquidated banks were Agricultural Development Bank, Industrial Development Bank and Mortgage Construction Bank. Re-structured banks and enterprises are Bank-e Milli, Pashtany Commercial Bank, Export Promotion Bank, DABM/S (the Afghan electricity enterprise), FLGE (Fuel and Liquid Gas Enterprise), Afghan Telecom, and Ariana Afghan Airlines.

not seem to be much left that could be liberalized or privatized in the failed state of Afghanistan” (Weinbaum, 2007).

As shown in Table 2.4, the economy has grown at a remarkable pace since 2002, despite the fact that the growth rate has been extremely volatile. The geometric mean of economic growth over the period 2003-2010 is 10.6 percent, which is a remarkable achievement despite serious security challenges. Agriculture is the dominant output sector. Although the share of agriculture sector has dropped from 45.2 percent of GDP in 2002 to 32.5 percent in 2009, it is still larger than the industries sector which makes 22.1 percent of GDP (see Figure 2.3). Furthermore, it is estimated that 59 percent of employed Afghan population is engaged in the agriculture or livestock (NRVA, 2009). Some sources maintain that more than 80 percent of households depend in some way on income received from agriculture-related activities. Inflation has been on average above 10 percent in the last eight years; the average inflation rate for the period 2003-2010 is 11.4 percent. However, this does not seem to have been a drag on economic growth.

**Figure 2.3: Sectoral composition of GDP and its evolution**



*Data source: Central Statistics Office*

**Table 2.4: Main economic indicators for the period 2003-2010**

	1382 2003/04	1383 2004/05	1384 2005/06	1385 2006/07	1386 2007/08	1387 2008/09	1388 2009/10	1389 2010/11
<i>Output</i>	<i>(in percent, unless otherwise indicated)</i>							
Real GDP growth	15.1	9.4	16.4	8.2	14.2	3.4	20.4	8.2
Nominal GDP (million US\$) <sup>b</sup>	4,766	5,704	6,815	7,722	9,739	11,757	14,483	<u>16,959</u>
GDP per capita (current US\$) <sup>b</sup>	187	218	254	281	345	405	486	<u>556</u>
GDP per capita, PPP (current inter. \$) <sup>b</sup>	659	723	835	933	938	955	1,321	
<i>Prices</i>	<i>(in percent)</i>							
CPI Inflation (period average) <sup>a</sup>	24.1	12.8	12.3	5.2	12.9	26.8	-12.2	8.9
CPI Inflation (end of period) <sup>a</sup>	10.3	14.9	9.5	4.8	20.7	3.2	-5.1	16.6
Core inflation (excl. cereals & energy; p.a.) <sup>a</sup>			11.8	6.7	5.1	10.2	3.1	8.8
<i>Fiscal sector</i>	<i>(in percent of GDP)</i>							
Domestic revenues	4.7	5	6.4	7.5	6.9	6.9	9	9.8
Foreign grants	6.7	9	11.2	9.3	11	8.7	8.9	11.1
Expenditures	14.5	15.3	16.6	19.6	19.7	19.3	19.1	20.8
Overall balance (incl. grants)	-3.1	-1.4	1	-2.9	-1.8	-3.7	-1.2	0.1
Overall balance (excl. grants)	-9.8	-10.4	-10.2	-12.2	-12.8	-12.4	-10.1	-11
<i>External sector</i>	<i>(in percent of GDP)</i>							
Exports of goods	39.7	28.8	26.3	23.5	18.8	18.6	17.0	16.2
Imports of goods	91.9	89.2	90.0	87.3	80.5	74.7	60.4	53.5
Trade balance	-52.2	-60.4	-63.6	-63.9	-61.6	-56.2	-43.4	-37.3
Current account balance	-10.0	-4.4	-2.8	-4.9	1.2	-0.9	-3.6	1.9
FDI	1.3	3.1	4.2	3.1	2.5	2.5	1.4	1.3
External debt			184.2	155.0	20.7	17.5	11.2	7.6
	<i>(in percent, unless otherwise indicated)</i>							
Commercial lending interest rate <sup>a</sup>				18.0	15.0	15.0	15.0	15.0
Exchange rate (Af. per USD) <sup>a</sup>	49.0	47.8	49.6	49.9	49.8	51.0	49.3	45.8
REER (percentage change) <sup>e</sup>	-11.3	10.1	3.2	-0.2	5.5	21.6	-12.0	9.3



	1382 2003/04	1383 2004/05	1384 2005/06	1385 2006/07	1386 2007/08	1387 2008/09	1388 2009/10	1389 2010/11
Unemployment <sup>c</sup>					7.0			
Employment rate (% of working-age pop.) <sup>c</sup>					61.9			
Poverty headcount rate <sup>c</sup>					36.0			
Poverty gap ratio <sup>c</sup>					7.9			
GINI Index <sup>c</sup>					29.0			
Ratio R/P 20% <sup>c</sup>					4.3			
Human Development Index <sup>d</sup>			0.307	0.311	0.307	0.327	0.342	0.349

Sources: a: DAB; b: WDI; c: NRVA (2009); d: UNDP; e: Author's calculation; For the rest of the series: IMF

**Notes:** Values in *italics* indicate estimates by their respective sources; Underlined values indicate estimates by author; Data on output excludes the drug economy; Exports include official and smuggled exports but exclude the export of opium and drugs; Trade statistics include both official records of and smuggled trade; R/P 20% refers to the ratio of average income of the richest 20% to the poorest 20% (calculated by author based on NRVA data);

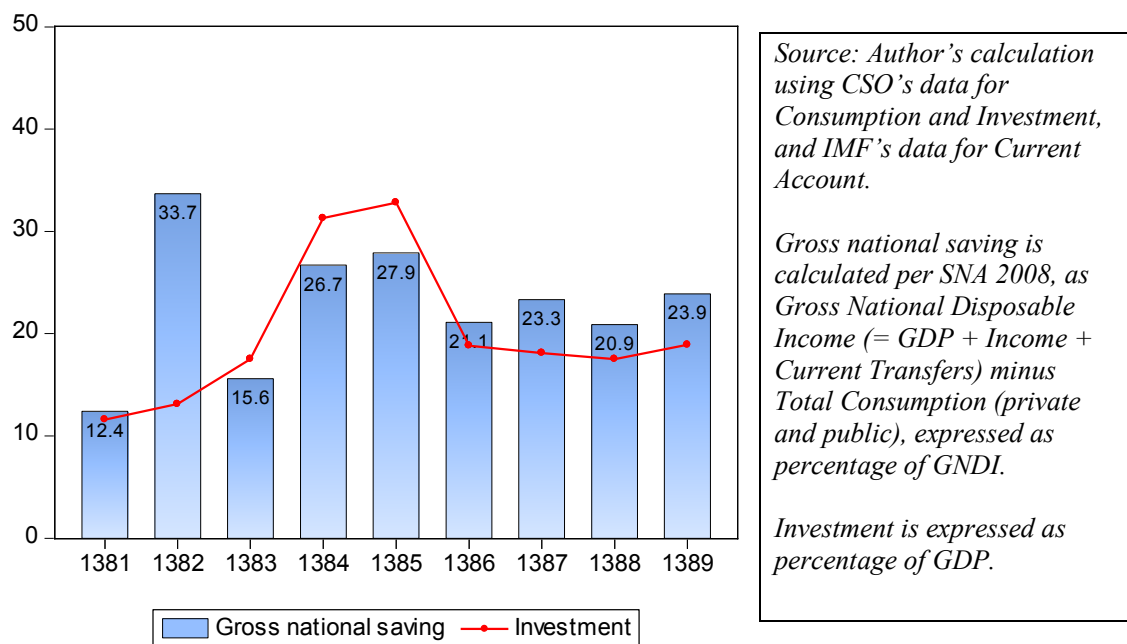
REER (Real effective exchange rate) is calculated by the author using Afghani's exchange rate vis-à-vis the most widely exchanged currencies in Kabul's money bazaar (i.e. US Dollar, Pakistani Rupee, Indian Rupee, Euro and Iranian Ryal). The weights used for these currencies are based on the average share of their respective countries' trade with Afghanistan over the period 2002-2009: US\$ (49%), Pak Rs. (24.5%), Indian Rs. (12.6%), Euro (11.7%) and Iranian Ryal (2.2%). The weight for US\$ is obtained as a residual after deducting the trade share of the four latter countries -- it is the average share of the Rest Of the World. The data on trade shares is obtained from UNCTAD Statistics;

Financial year starts according to the official Afghan calendar (i.e. Persian calendar of Solar Hijri). SH year starts March 21. For example, the year 1389 corresponds to Mar 21, 2010 – Mar 20, 2011.

Financial sector in Afghanistan has developed rapidly in recent years. The number of commercial banks (including private & public banks and branches of foreign banks) reached 17 banks in 2011. The total assets of the banking sector which were less than US\$300 million in 2004 have soared to US\$5.3 billion in December 2010. The commercial lending prime interest rate in Afghanistan is now at 15 percent which is almost at the same level as that in Iran and Pakistan (see Table 2.5). Loans-to-deposit ratio stands at 55 percent. Furthermore, there seems to be sufficient capital for investment in the economy, thanks to large current transfers that Afghanistan is receiving from the rest of the world (see Figure 2.4).

Despite serious security challenges, Afghanistan has managed to attract a noticeable amount of foreign investment. According to official estimates, Afghanistan has received nearly \$2 billion worth of foreign direct investment between 2003 and 2010;<sup>1</sup> the sectors of telecommunications and construction have been the main investment sectors. However, in comparison with other countries in the world, Afghanistan is still far behind in terms of the quality of environment for investment: IFC (International Finance Corporation) and the World Bank's *Doing Business* 2011 report ranks Afghanistan in 167<sup>th</sup> position among 183 countries in the world.

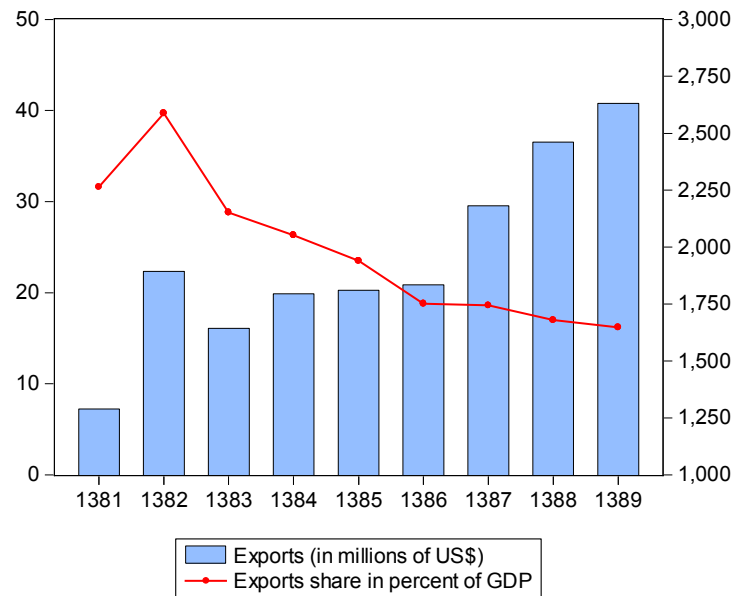
**Figure 2.4: Savings and Investment**



<sup>1</sup> Source: AISA (Afghanistan Investment Support Agency)

The trade balance has improved since 2002, though the deficit remains very significant. The trade deficit which was over 60 percent of GDP in 2005 has declined to below 40 percent in 2010. However, this decline is mainly due to a drop in imports, which were 90 percent of GDP in 2005 and have now decreased to just over 50 percent. On the other hand, exports despite having increased in nominal

**Figure 2.5: Exports between 2002 and 2010**



*Data source: IMF*

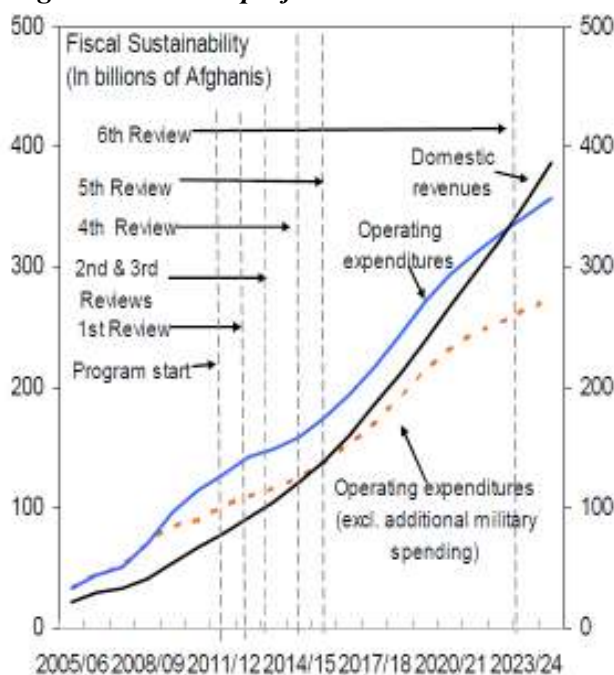
terms have shrunk as a percentage of GDP. Exports have doubled between 2002 and 2010 to \$2.6 billion, but as a percentage of GDP they have actually declined over the same period from nearly 40 percent to around 15 percent, as shown in Figure 2.5. The real effective exchange rate (REER) shows that Afghanistan has lost severely its competitiveness position in the world. The REER appreciated by 27 percent between 2004 and 2010 – an appreciation that is mainly due to rising domestic prices. Nevertheless, the large trade deficit is balanced in the current account by the huge inflow of foreign aid. In fact, current account is nearly balanced, and there does not seem to be any external disequilibrium which would put pressure on the exchange rate. But any shock to aid inflow would severely affect the current account balance and may engender a serious balance-of-payments crisis.

The fiscal position remains very poor. Although domestic revenues have doubled as a percentage of GDP between 2003 and 2010, there is still a modest gain in terms of fiscal balance. Domestic revenues cover merely half of total expenditures; only 47 percent of total budget were covered by domestic revenues in 2010/11. The remaining deficit is financed by foreign aid in the form of budget support. Domestic revenues are not even sufficient to finance entirely the operating budget – they could only cover 65 percent of recurrent expenditures in 2010. This raises serious concerns over the fiscal sustainability in Afghanistan. The IMF forecasts a balanced fiscal budget no earlier than 2023. This forecast, however, is based on the presumption that the security situation will not deteriorate. Any

worsening security situation and/or an increase in security forces beyond 2013, and thus an increase in military budget, would postpone the fiscal sustainability by several other years.

The Human Development Report puts Afghanistan in the category of countries with “low” HDI (Human Development Index). Afghanistan is thus the only country among its neighbours to be ranked in this category. All other neighbouring countries are in “middle” and “high” HDI categories. However, inequality appears to be the lowest in Afghanistan as indicates the GINI coefficient. Furthermore, according to a 2007 study, 36 percent of the Afghan population lives under the national poverty line of 1,255 Afs. per month, which puts it – in the region – after Pakistan with a headcount poverty rate of 51 percent.

**Figure 2.6: Fiscal projections**



Source: IMF (2010)

**Table 2.5: Regional comparison of development indicators**

	Afghanistan	Pakistan	Tajikistan	Uzbekistan	Turkmenistan	Iran
GDP per capita (2009; current US\$)	486	955	716	1,182	3,745	4,540
8-year average growth rate (2003-2010)	11.9	5.2	7.6	7.6	12.1	4.1
8-year average Inflation (2003-2010)	11.4	9.6	11.0	11.4	6.6	15.0
Commercial lending Interest rate	15.0	15.0	23.1	...	...	12.0
Poverty headcount rate	36	51	17	2	...	...
GINI Index	29	31	33	37	43	38
HDI (ranking among 169 countries; 2010)	0.349 (155th)	0.490 (125th)	0.580 (112th)	0.617 (102nd)	0.669 (87th)	0.702 (70th)

Sources: WDI; IMF WEO; EconomyWatch.com (for interest rate); and Human Development Report 2009;

Note: Data on poverty and GINI index is of 2009 for all countries with the exception of Afghanistan, for which data is of 2007.

The informal sector is significantly large in Afghanistan. The World Bank estimates that 80 to 90 percent of economic activity in Afghanistan occurs in the informal sector, “which has been largely responsible for the recent economic recovery and dynamism” (World Bank, 2004). A large part of the informal sector is the opium economy; drug-related activities

(including opium production and processing activities) are estimated to equal 35 percent of GDP (World Bank, 2004). United Nations Office on Drugs and Crimes (UNODC) estimates that the farm-gate value of opium production was 5 percent of GDP in 2010. Once opium production is taken out of the agricultural output figures, the share of agriculture sector is reduced from around 30 percent to around 25 percent – making it as large as the industries sector. However, the gross export value of opiates is estimated at 11 percent of licit GDP in 2010 – a figure which was 50 percent in 2003 (UNODC, 2010). If the exports of drugs are included in the Balance of Payments statistics, the current account balance turns to be in a large surplus. This might be one of the factors which have prevented the Afghani in the last six years from depreciation.

### 1.3. Foreign aid in Afghan economy

Afghanistan has been one of the major aid recipients in the last decade. According to the World Bank data, over the period 2000-2009 Afghanistan was the sixth largest recipient of *official* aid in terms of proportion to GDP. The average aid Afghanistan has received amounts to 35 percent of GDP. However, if we ignore the *small states*,<sup>1</sup> Afghanistan becomes the third largest recipient country after Liberia and Burundi. In terms of nominal value, Afghanistan was the second largest recipient after Iraq, receiving \$26 billion in official aid between 2000 and 2009. Table 2.6 enlists eleven top recipient countries of official development assistance<sup>2</sup> over the period 2000-2009. In terms of proportion to GDP, although Afghanistan comes in the sixth position, the total GDP of the first five countries altogether does not even reach a quarter of the Afghan GDP.

**Table 2.6: Largest aid recipients over the period 2000-2009**

	Average ODA/GDP		Total ODA received (billion US\$; net)
Liberia	62.8	Iraq	60.0
Micronesia, Fed. Sts.	42.7	Afghanistan	26.6
Timor-Leste	42.6	Nigeria	24.3
Burundi	38.5	Vietnam	20.6
Marshall Islands	35.8	Ethiopia	20.2
Afghanistan	35.4	Tanzania	18.5
Sierra Leone	31.4	Congo, Dem. Rep.	18.5
Solomon Islands	31.0	Pakistan	17.6
Congo, Dem. Rep.	27.3	India	15.6
Iraq	26.7	Mozambique	15.1
Mozambique	26.2	China	14.9

<sup>1</sup> Commonwealth Secretariat defines “small states” as countries with a population of 1.5 million or less.

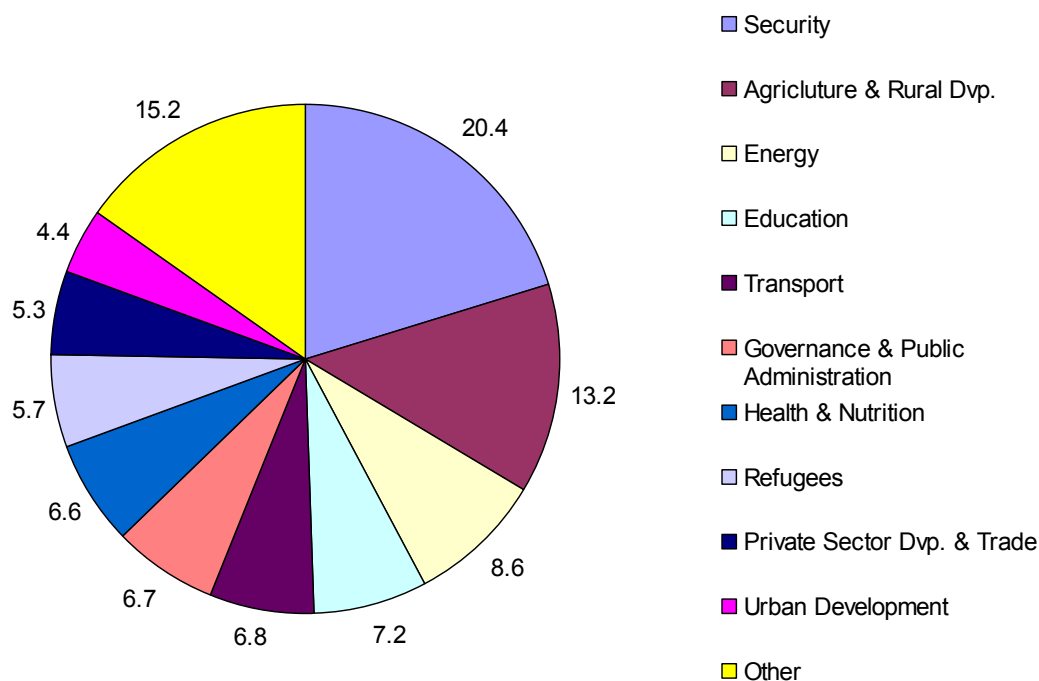
<sup>2</sup> Official Development Assistance (ODA) comprises all flows of official financing which are disbursed at concessional terms (i.e. having a grant element of at least 25 per cent). ODA include both bilateral and multilateral aid. It excludes, however, grants from non-governmental organisations and charities raised through private or individual contributions.

Source: WDI and OECD STAT;

Figures above include disbursements by both DAC and non-DAC member countries.

According to the data provided by the Afghan Ministry of Finance, almost one-fifth of all official assistance has been allocated to “security” issues. Agriculture and rural development have received 13 percent of all assistance, followed by energy and education, each one receiving 9% and 7% respectively. As Figure 2.7 shows, the sectors of transport, governance and health have received equal shares of almost 6 percent.

**Figure 2.7: Sectoral decomposition of ODA disbursements over 2000-2010**

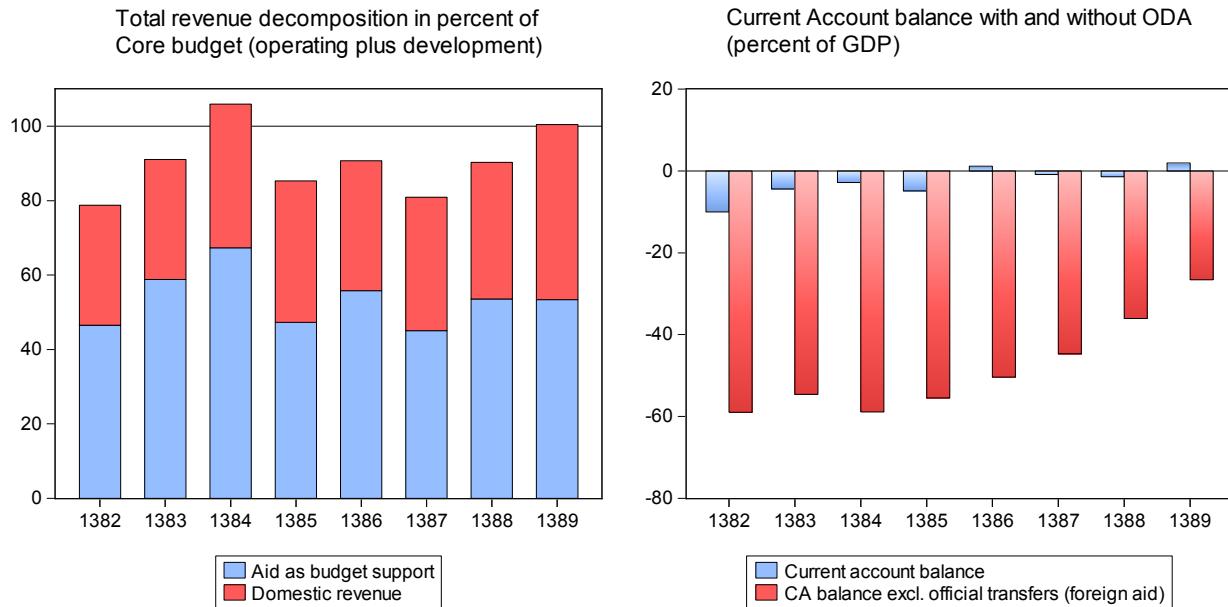


Source: DAD (Development Assistance Database), Ministry of Finance

Foreign aid has a significant weight in the Afghan economy. In the year 2010/11, foreign grants financed almost half of the core budget (operating plus development), while domestic revenues could only cover up to 65 percent of the operating budget. As it is shown in Figure 2.8, the current account has been almost in balance in recent years. However, once we exclude foreign aid inflows, the current account turns to be in large deficit of nearly 50 percent of GDP. This shows the extent to which the Afghan economy is dependent on foreign aid inflows. Any shock to aid inflows could create serious macroeconomic imbalances. On the fiscal side, the government will be obliged to finance the remaining part of the budget through borrowing from domestic and foreign markets, which will increase its stock of debt. This will seriously affect the fiscal sustainability of the country. Joya and Faeq (2009) analysed fiscal sustainability in Afghanistan in case of a shock to foreign aid. They studied a scenario under which ODA in the form of budget support dropped to a level of 50 billion Afs.

or US\$ 1 billion in 2015 (down from 80 billion Afs in 2009)<sup>1</sup> and then remained constant till 2030. Based on the assumption that the government will be able to borrow domestically by 2011 (through the issuance of treasury bills) and that the average share of domestic debt in

**Figure 2.8: Foreign aid in fiscal and external budgets**



Data source: IMF

total debt will be 25 percent, their results showed that in case of such a shock to budget-support aid, the stock of debt will soar from a level of 12% in 2009 to more than 70% in 2030. However, their assumption that Afghanistan will be able to borrow from foreign markets – satisfying the remaining 75% of financing needed – seems almost unrealistic because poor countries which are in difficult fiscal situation cannot easily get non-concessional loans from abroad even under high risk premium rates. Therefore, the actual impact of such a shock on fiscal sustainability might be even larger than what Joya and Faeq's (2009) results show.

On the external side, any shock to foreign aid inflows will cause large deficits in the current account and will engender a balance-of-payments crisis. This will put downward pressure on the exchange rate which will further exacerbate the situation given the large size of imports in the Afghan economy. The Central Bank (Da Afghanistan Bank) which has accumulated more than \$5 billion of gross reserves (\$5.3 billion as of March 2011<sup>2</sup>) will lose rapidly its foreign reserves and will not be able to practice effectively its monetary policy, since the foreign exchange auction is the principal instrument of its monetary targeting

<sup>1</sup> The actual level of foreign grants as budget support in 2009/10 was 79.5 billion Afs.

<sup>2</sup> IMF estimates the import coverage of foreign exchange reserves at 14.3 months.

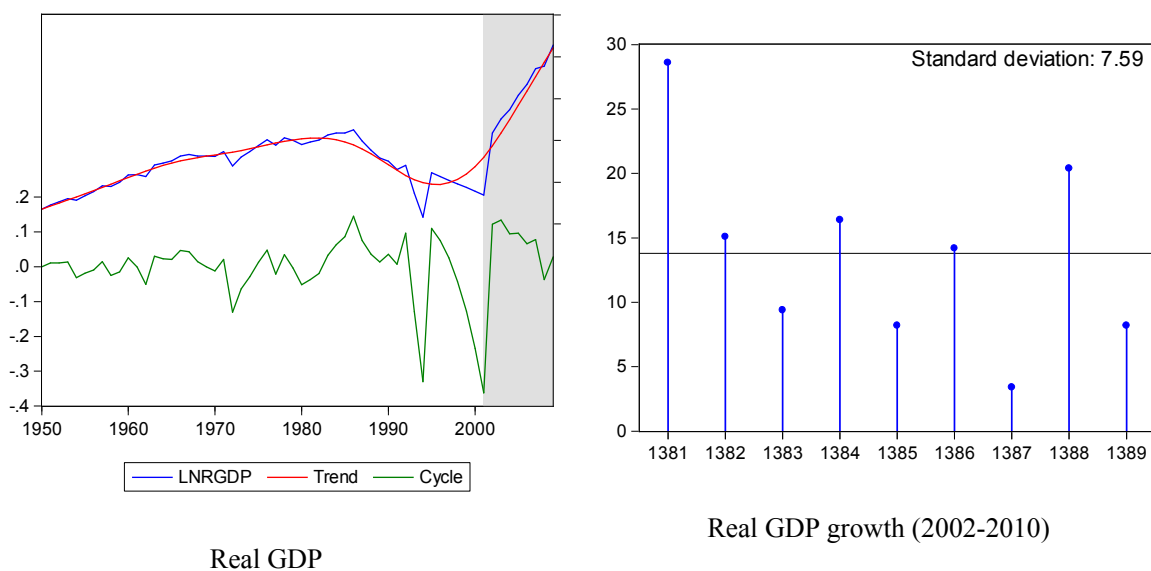
system. Hence, vulnerability of the Afghan economy to shocks in foreign aid inflow is extremely high, and all effort must be made to decrease the exposure of the Afghan economy to external shocks.

## 1.4. Macroeconomic volatility in Afghanistan

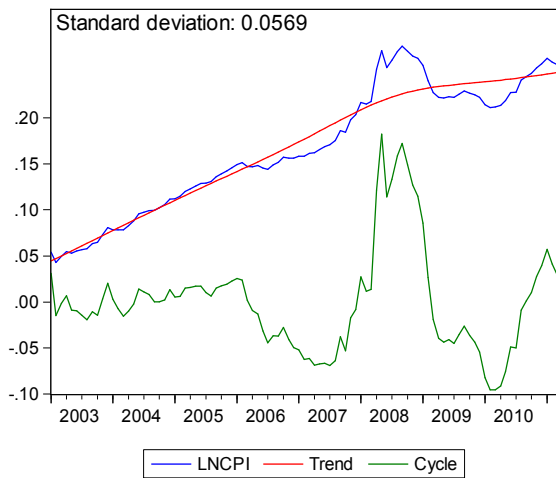
In section I.1.4, different methods for measuring volatility were explained. My approach in this section will be to take the standard deviation of growth rates or of the logarithmic first-difference, in the case of short series; while I will proceed with applying the Hodrick-Prescott filter on long series (on their logarithmic values) and then calculate the standard variation of the cyclical component.

Macroeconomic volatility in the Afghan economy is remarkably high. Output and prices have become more and more volatile as economic development has intensified. Real GDP growth has fluctuated between 3.4 percent and 28.6 percent since 2002, with a standard deviation of 7.6. Inflation (12-month CPI change) which was 6 percent in May 2007 skyrocketed to 43 percent in the same month next year. Twelve months later in May 2009, it plunged to -15.8 percent – showing a strong deflation. Since then, it is now recovering and has reached around 16 percent at the end of the year 1389 (2010/11). Its standard deviation amounts to 12.3. The exchange rate, however, has been stable. Although serious oscillations appeared in 2003 after the introduction of the new Afghani, the exchange rate has been fluctuating in a narrow band around 50 Afs. since 2004.

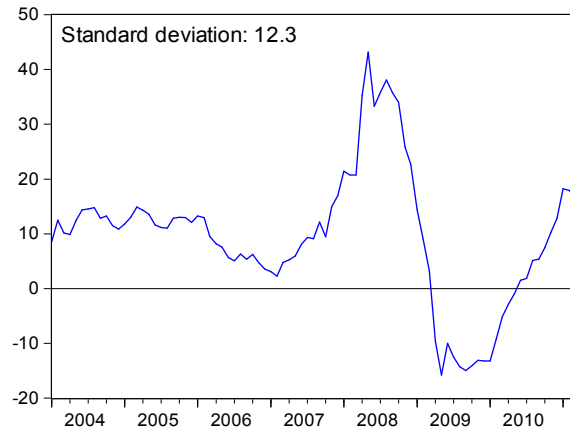
**Figure 2.9: Trend and volatility in selected economic variables**



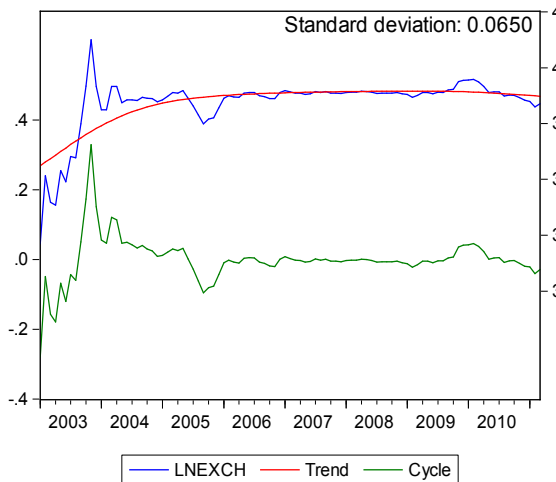




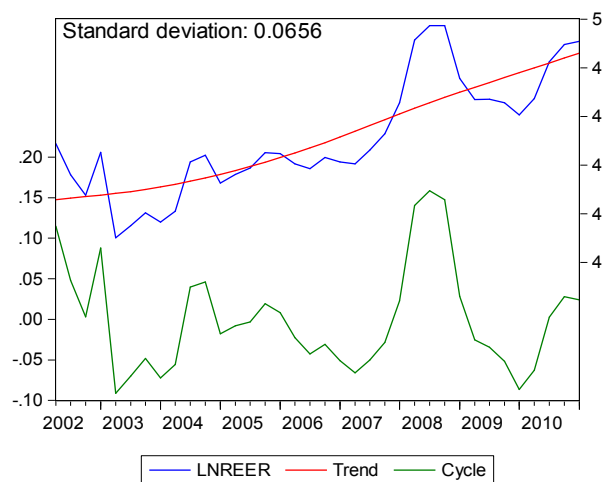
Consumer Prices Index (Jan 2003-Mar 2011)



Inflation rate (Jan 2004-Mar 2011)  
[12-month CPI change]



Exchange rate (Jan 2003-Mar 2011)



Real effective exchange rate (Q1 2002 - Q1 2011)

Figure 2.9 shows volatility in selected economic variables. For some series, trend and cyclical components have been decomposed and demonstrated in separate graphics. Needless to say the standard deviation calculated on the cyclical components of these series ought to be between 0 and 1 because the initial values are in logarithmic form. For the level of prices, the standard deviation has been calculated separately both on its growth rate (i.e. inflation) and on the cyclical component of its indices (i.e. consumer prices index).

Volatility in output and in prices, combined with a highly uncertain macroeconomic environment and large macroeconomic imbalances (e.g. fiscal deficit) may have serious costs in terms of welfare loss and rise in poverty in Afghanistan, and may seriously undermine the long-term growth in the country – as explained in section I.2.

## 2. Diagnostic approach to macroeconomic instability in Afghanistan

As explained in the earlier sections, macroeconomic instability may have serious negative consequences in terms of long-term growth, welfare, inequality and poverty. Even if a country has a high average-growth-rate, in the presence of macroeconomic instability it will not be able to sustain this rate over the long-term. In fact, igniting and sustaining growth are not always the same enterprise; they need different policies, instruments and institutional arrangements (Rodrik, 2007). Part I concluded that macroeconomic instability is both a source and a reflection of underdevelopment. This implies that macroeconomic instability and underdevelopment interact within a vicious cycle, each re-enforcing the other. Thus, if development and growth-enhancing policies are not coupled with effective long-term stabilisation policies, then it is hard to imagine if the country could get out of the poverty trap and underdevelopment soon enough. Long-term stabilisation policies – not only of macroeconomic but also of structural nature – are necessary for the success and effectiveness of development and growth-enhancing policies over the long-run.

These stabilisation policies cannot be adopted randomly or without looking at the nature of instability in the country. If instability comes from volatility in a monetary variable, then policies aiming at stabilising real indicators might not have any positive impact – in some cases they might even worsen the situation. Or if instability is generated by uncertainty in political environment, then short-term stabilisation policies of monetary origin will be of no help at all. In addition, tackling macroeconomic instability cannot be done either by simply applying all A-to-Z known stabilisation policies in a country, hoping that some of these policies and reforms will target the source of instability and will correct the distortionary elements. As a matter of fact, some policies and reforms might be stabilising in some countries with a specific environment, and might be de-stabilising in others. Thus, appropriate stabilisation policies are needed for each specific nature of instability.

The methodology I am proposing in this section is based on the above considerations. It requires two sets of pre-requisite knowledge. First, one has to carefully identify the source or sources of instability; as to which economic activities, or distortionary market elements, or institutional arrangements generate instability in the economy. This can be done through various empirical and analytical methods, and is almost always practically doable. Secondly, having knowledge of the local context is indispensable. Rodrik (2007) has insisted that appropriate policies are almost always *context specific*. “This is not because economics works

differently in different settings, but because the *environments* in which households, firms, and investors operate differ in terms of the opportunities and constraints they present.”

My approach in this section is of a diagnostic one. I proceed in three steps: First, I study the nature of macroeconomic instability in Afghanistan, as to pinpoint each economic variable which exhibits strong volatility and fluctuation. Secondly, I identify the source(s) of instability for each of these economic variables: the political, institutional and economic factors which are generating volatility over these variables, creating imbalances in the economy, and which are producing uncertainty in the environment. Finally, I will propose appropriate policies and reforms for each of these sources separately, in order to stabilise the economy as a whole.

I carried out the first step in page 51. I now proceed with the remaining task in the subsequent sections.

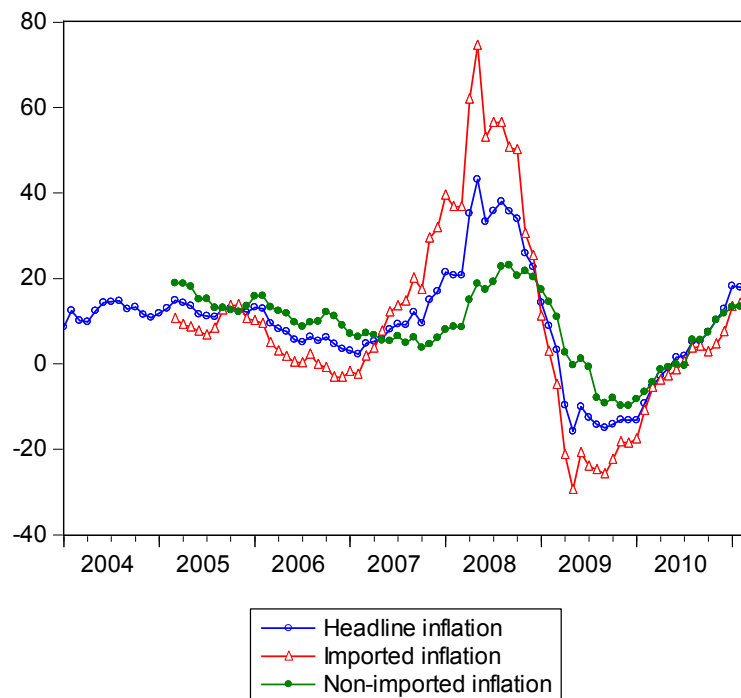
## 2.1. Sources of macroeconomic instability

### (i) Price volatility

Prices have been more volatile than growth as it was shown in Figure 2.9. Within 12 months between May 2008 and May 2009, the CPI inflation dropped from its peak of 43.2 percent to -15.8 percent.

Its standard deviation amounts to 12.3 percent. The first type of question to ask is whether this inflation is imported or is generated domestically. Looking at the decomposition of CPI inflation to imported and non-imported elements, as illustrated in Figure 3.0, one could easily observe that the large fluctuations in level of prices are generated by external shocks transmitted

**Figure 3.0: CPI decomposition to imported and non-imported inflation**



*Imported and non-imported inflation is calculated by author based on disaggregated CPI data provided by CSO.*

through the trade channel. Given the high degree of openness of the Afghan economy, imported items constitute 47.9 percent of the overall CPI basket. Imported inflation reached as high as 74.5 percent in May 2008 and plunged to as low as -29.4 percent in May 2009. While over the same period, non-imported inflation fluctuated very narrowly between 18.8 and -0.3 percents. The standard deviation of imported and non-imported inflation thus differ remarkably; 21.7 and 8.3 percents, respectively.

To identify the sources of price volatility in Afghanistan, I use an econometric model of log-log structure. Consumer prices index (CPI) is chosen as the indicator of the level of prices. Internal shocks are proxied by the stock of money in circulation or M0 (CIC) and the nominal effective exchange rate (NEER). Terms-of-trade shocks are proxied by the average world prices of crude oil (OIL) and the world prices of cereals (WCRL), calculated respectively by the IMF and the FAO as indexes. These two indexes are chosen because Afghanistan is entirely an oil-importing country, and imports a large amount of cereals each year – it is not yet self-sufficient in cereal production. The impact of these variables on the Afghan economy is transmitted after a quarter due to lags in transportation and other trade barriers. Climate shocks are proxied by the average amount of rainfall (RAIN). Both current and first lag of this variable is included in the regression because the maturity period of some crops may extend to two quarters. Finally, political instability is proxied by the number of civilian deaths (DT).

An important variable in the model is the price ratio of non-tradable goods to tradables (NTT). It contains an enormous amount of information as to whether inflation-generating shocks come from the internal or the external sources. If these are the internal sources which drive inflation up or down, then there should be positive correlation between the prices of non-tradable goods and the overall CPI inflation. But if the shocks are of external nature, then we should expect that the prices of tradable goods will increase and fall much faster than the prices of non-tradable goods. In this case, there will be a negative correlation between CPI inflation and the price ratio of non-tradables to tradables.

In order to study the volatility in domestic prices and its relation with “shocks” to the exogenous variables, the model uses the ‘growth in level’ of each variable, except for the variable NTT and RAIN. As explained in section I.1.4, by using the logarithmic growth rate of variables, the model captures the shocks and volatility in each variable and will tell us how much of a shock to a given explanatory variable may cause volatility in the dependent variable. However, since we are not concerned with the shock and variability in the ‘price ratio of non-tradables to tradables’ rather with the association between the ratio itself and the

price volatility, I use the level of ratio instead of its variation. Likewise, the level of rainfall at each quarter is used instead of its quarterly variation, because each four quarter through a year represents different climatic conditions.

The model is regressed using quarterly data. The choice of the frequency of data is not made randomly. In fact, high frequency data such as monthly series include other temporary and transitory shocks which will affect our estimation results. While, on the contrary, low frequency data (i.e. annual) will not allow us to study the short-term cyclical behaviour of our variables of concern. Therefore, the choice of quarterly data has been made carefully.

**Table 2.7: Estimation Results**

Dependent variable: DLOG(CPI)					
Method: Ordinary Least Squares					
Sample (adjusted): 2003Q2 – 2011Q1					
Number of observations: 32 after adjustment					
Variables	1	2	3	4	5
C	0.0039 (0.42)	0.7414 (2.43)	0.6884 (2.19)	0.6836 (2.10)	0.6913 (2.10)
DLOG(CIC)	0.1867 (1.45)		0.1309 (1.06)	0.1189 (0.91)	0.1342 (1.00)
DLOG(NEER)	-0.1413 (-1.04)		-0.1028 (-0.80)	-0.1238 (-0.89)	-0.1269 (-0.90)
LOG(NTT)		-0.1544 (-2.39)	-0.1446 (-2.18)	-0.1403 (-2.03)	-0.1396 (-1.99)
DLOG(OIL(-1))	0.0763 (2.32)	0.0707 (2.28)	0.0656 (2.11)	0.0589 (1.67)	0.0578 (1.62)
DLOG(WCRL(-1))	0.1919 (3.45)	0.1675 (3.29)	0.1840 (3.52)	0.1921 (3.41)	0.1926 (3.39)
LOG(RAIN)				-0.0027 (-0.41)	-0.0023 (-0.35)
LOG(RAIN(-1))				-0.0023 (-0.39)	-0.0070 (-0.81)
DLOG(DEATH)					0.0134 (0.73)
R-squared	0.5269	0.5617	0.5998	0.6046	0.6135
Prob(F-statistic)	0.0003	0.0000	0.0001	0.0009	0.0019
D-W statistic	1.7765	1.7272	1.8619	1.8527	1.8848

*Numbers in parentheses are t-statistics.*

The model is regressed using different explanatory variables in order to test the robustness of the model. Table 2.7 shows the estimation results of five different regressions for the model. Looking at column 3, more than half of the variance of the dependent variable is explained by the model, the signs of all variables are theoretically consistent, and the

Durbin-Watson statistic indicates no autocorrelation.<sup>1</sup> The results show that money growth and shocks to exchange rate do not have any impact on the volatility of prices, as they are both statistically insignificant. This may support the argument that the relationship between money growth and the level of prices is not stable in developing countries in the short-run. Particularly in an economy undergoing rapid financial liberalization, – which is the case in Afghanistan – the parameters characterizing the demand for money (notably the interest elasticity of money demand) and the relation between the monetary aggregate and inflation may be *highly unstable* (Agénor, 2004). Moreover, other empirical studies have found that monetary aggregates cannot be optimally used as information variables for inflation or nominal income (Mishkin, 2007). On the other hand, despite the fact that almost half of consumer spending items in Afghanistan is imported and that any shock to the exchange rate will have a significant impact on prices, the observed data since 2003 does not show such an incident; the nominal exchange rate has been almost stable and has never experienced any serious shocks which could have produced volatility in the prices.

The most important result of the model is that there is a strong negative coefficient for the variable NTT. This gives a strong signal that the sources and shocks of inflation are of external nature. If these shocks were produced internally, then the prices of non-tradable goods would have increased or fallen faster than those of tradable goods, hence showing a positive correlation between the ratio NTT and the overall inflation. However, a negative correlation means that inflation is strongly associated with the price movements in tradable goods – which is the case in our results. This evidence helps us with making a conclusive judgement that price volatility in Afghanistan is driven *primarily* by external shocks.

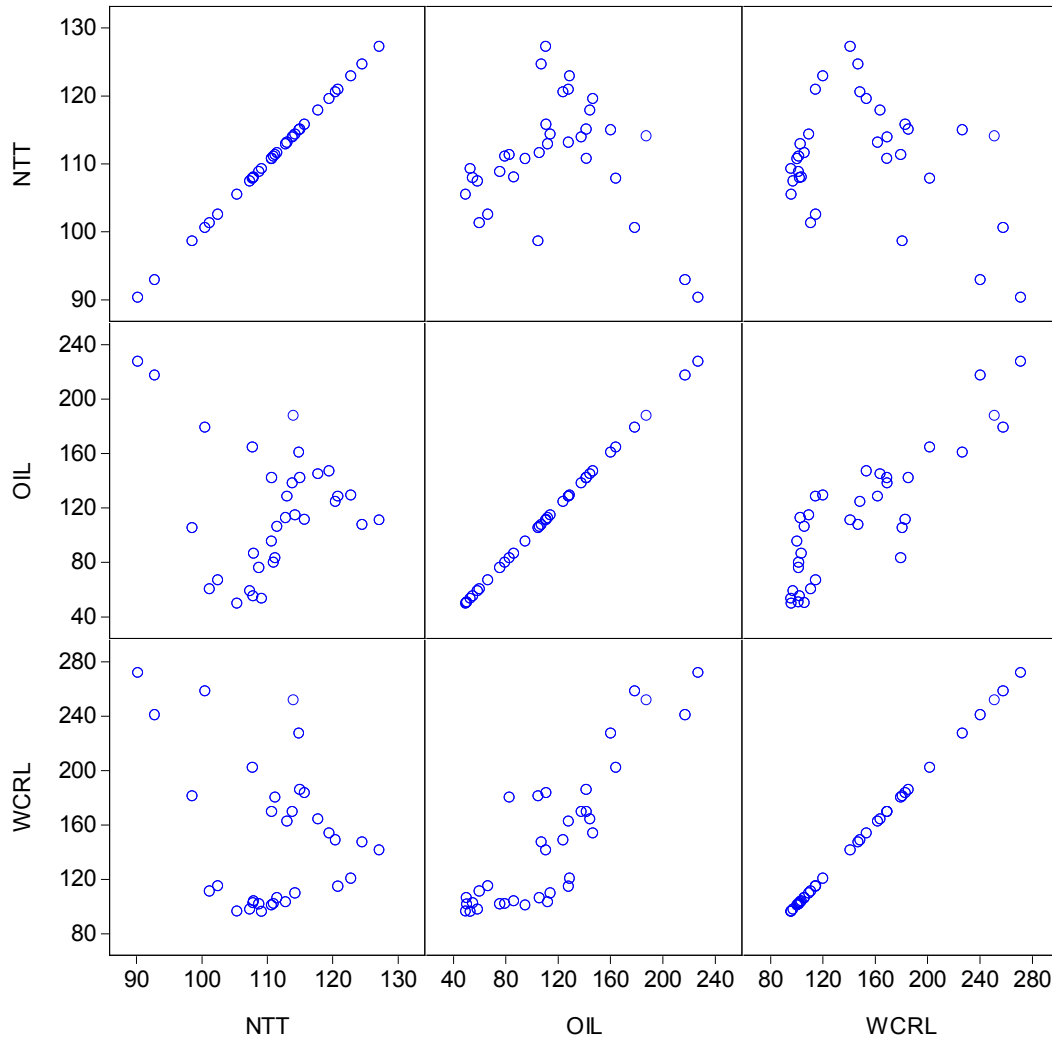
Another interesting result of the model is that shocks to world prices of oil and cereals explain together almost a quarter of price volatility in Afghanistan. Particularly, a one-percentage shock to world prices of cereals induces 18.4 percent volatility in the level of prices in Afghanistan. One question which comes to our mind is that why shocks to the world prices of cereals engender more volatility in domestic prices compared to shocks to the world prices of oil, despite the fact that Afghanistan imports its entire oil requirement from abroad but produces more than half of its cereal requirement domestically. The answer is that food items constitute almost two-thirds of Afghan consumer spending, and particularly “cereals” make 28 percent of total CPI basket. Hence, shocks to world food prices have more impact on domestic prices compared to those of oil.

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<sup>1</sup> Even if there were an autocorrelation between the residuals, it would not matter in our case because we are only studying the relation between the variables and we do not use the model to make forecasts. Nevertheless, the current D-W statistic of 1.862 is well above the relevant ( $k=5$ ,  $t=32$ ) greater bound value of  $dU=1.597$ . Hence, we can conclusively decide not to reject the null hypothesis of the absence of autocorrelation.

All five regressions indicate that addition or omission of variables does not modify the estimated coefficients or their level of significance. Through all regressions, monetary aggregate (CIC) and NEER are insignificant, while the variable ‘world prices of cereals’ (WCRL) remains significant and maintains almost the same estimated value of coefficient. OIL, however, is significant at nearly 10 percent of error. The variables rainfall and number of civilian deaths (DT) remain insignificant. This shows that climatic and political shocks do not have any impact on price volatility in Afghanistan. This does not seem to be unrealistic,

**Figure 3.1: Scatterplot matrix**



because climatic shocks do affect output growth and may lead to a drop in agricultural production, but the supply deficit for agricultural crops is normally compensated by imported crops. Therefore, climatic shocks do not lead to sudden jumps in prices.

Given the limited number of observations (i.e. micronumerosity), there is a risk of multicollinearity among the regressors. One of the consequences of multicollinearity is that the coefficient of determination will be high (generally above 0.90) but there will be few

significant t-statistics. Looking at our all five regressions, we do not observe such pattern in our estimation results. For further vigilance, figure 3.1 shows the scatterplot for the three suspected explanatory variables, namely NTT, OIL and WCRL. The scatterplot indicates that, as a whole, there is no strong multicollinearity among the three variables. Heteroskedasticity may also occur in our model because data has been transformed into ratios, first difference and logarithmic forms. The Breusch-Pagan-Godfrey test for all five regressions rejects the existence of heteroskedasticity.

**Conclusion:** Based on the estimation results of our model, we can conclude that *terms-of-trade shocks* explain “significant” portion of price volatility in Afghanistan. Shocks to world prices of oil and cereals explain almost a quarter of variations in prices. This also shows that *low-degree of diversification* in the production structure is another factor which has exposed the Afghan economy to external shocks. In fact, Afghanistan has a high degree of exports concentration; it exports only few export items.

## ***(ii) Growth volatility***

Identifying the sources of growth volatility could be done through two different methods. One way would be to construct an econometric growth model, integrating both internal and external factors, and then to regress this model using time series data. The model should be built in a way as it would permit to easily observe the volatility pattern in each variable. In this way, using actual data, it would be possible to see which shocks to certain variables caused volatility in the growth rate. This method is preferable since it can incorporate all external variables which do not directly enter in the growth equation but which affect growth indirectly through their impact on growth determinants.

Another way, in case of limited time series data, would be to decompose the real GDP growth into its sectoral elements and to find those sectors whose volatility induced fluctuations in total output. Once we identified volatile sectors, we could then study the shocks affecting these sectors. These shocks can be induced by either internal or external factors. However, this method will only let us find the *sectoral* shocks, and those external shocks which are transmitted through other channels to the economy (and not through output sectors) cannot be identified. Nonetheless, I proceed with the latter approach due to lack of sufficient time series data.



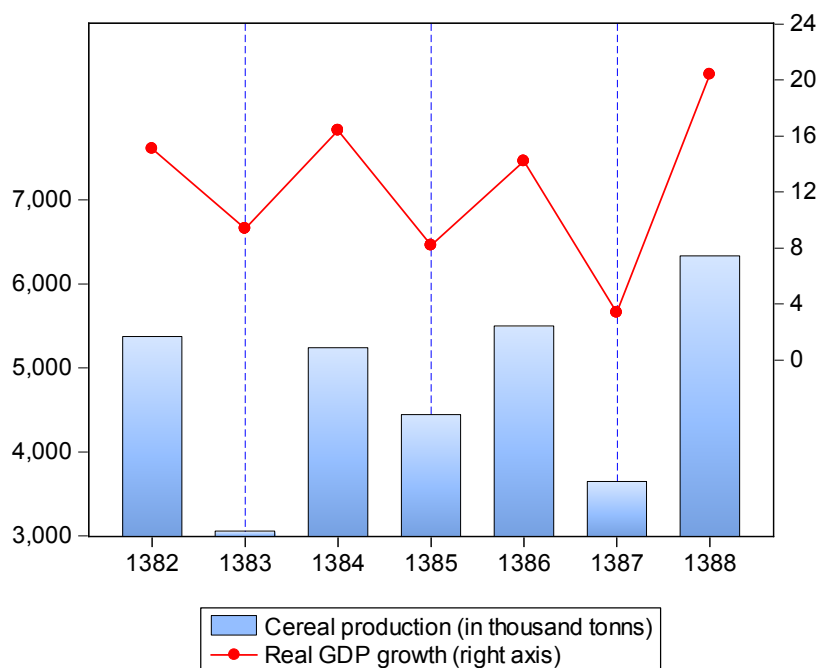
**Table 2.8: Real GDP growth by sectoral decomposition**

	2003-04 1382	2004-05 1383	2005-06 1384	2006-07 1385	2007-08 1386	2008-09 1387	2009-10 1388
Agriculture	<b>17.1</b> (45.6)	<b>-4.9</b> (39.7)	<b>6.7</b> (37.0)	<b>0.6</b> (33.4)	<b>24.6</b> (35.9)	<b>-16.5</b> (29.3)	<b>23.3</b> (32.9)
Cereals and other crops	<b>20.9</b> (37.7)	<b>-7.5</b> (31.9)	<b>9.5</b> (30.5)	<b>0.0</b> (27.4)	<b>28.7</b> (30.4)	<b>-20.2</b> (23.7)	<b>27.6</b> (27.6)
Industries	<b>6.1</b> (18.1)	<b>32.1</b> (21.8)	<b>23.9</b> (23.6)	<b>20.1</b> (25.5)	<b>7.3</b> (23.5)	<b>5.7</b> (24.6)	<b>5.5</b> (23.1)
Manufacturing	<b>-2.9</b> (12.6)	<b>21.7</b> (14.0)	<b>19.5</b> (14.6)	<b>14.5</b> (15.1)	<b>5.1</b> (13.6)	<b>2.3</b> (13.9)	<b>4.0</b> (11.7)
Construction	<b>36.1</b> (5.3)	<b>56.2</b> (7.5)	<b>32.3</b> (8.7)	<b>30.0</b> (10.2)	<b>10.0</b> (9.6)	<b>10.0</b> (10.3)	<b>6.7</b> (11.0)
Services	<b>13.7</b> (34.5)	<b>16.2</b> (36.6)	<b>14.6</b> (36.7)	<b>16.9</b> (38.5)	<b>14.2</b> (37.9)	<b>13.8</b> (43.0)	<b>17.3</b> (40.9)
Transport and Communications	<b>45.4</b> (13.1)	<b>12.9</b> (13.6)	<b>10.5</b> (13.1)	<b>26.6</b> (14.9)	<b>19.3</b> (15.3)	<b>18.0</b> (17.6)	<b>19.0</b> (18.1)
GDP growth (CSO)	<b>14.3</b>	<b>9.4</b>	<b>14.5</b>	<b>11.2</b>	<b>16.2</b>	<b>2.3</b>	<b>17.1</b>
GDP growth (IMF)	<b>15.1</b>	<b>9.4</b>	<b>16.4</b>	<b>8.2</b>	<b>14.2</b>	<b>3.4</b>	<b>20.4</b>

Figures in parentheses are percentage shares in GDP. Shaded columns are years corresponding to the “troughs” of fluctuations in growth.

Source: CSO

**Figure 3.2: GDP growth and cereal production**



Data source: FAO/MAIL

Table 2.8 shows sectoral decomposition of real GDP growth for the period 2003-2009. We notice that volatility in output growth is always induced by shocks to the agriculture sector which has a large weight in GDP (over 30 percent). Data also shows that the cyclical behaviour of GDP growth is a function of the level of agricultural output. The

“troughs” in growth fluctuation (i.e. in 2004, 2006 and 2008) coincides with a drop in agricultural production, while the “peaks” coincides with a booming agricultural output, as it is illustrated in Figure 3.2. The years 2004, 2006 and 2008 were the years of severe shortfall in rain; either the amount of rainfall was totally insufficient, or the rainfall did not occur at the right season and was not equally distributed all over the country. In 2004, Afghanistan experienced a severe drought. Total cereal production dropped from a level of over 5 million tonnes in previous year to almost 3 million tonnes, raising cereal deficit (requirement for cereal imports) to over 2 million tonnes. Total value added for the agriculture sector declined by almost 5 percent in that year. However, this decline was partially offset by a large increase in industrial sector which grew by more than 30 percent. Hence, real GDP growth did not drop lower than 9 percent. In 2008, due to a strong shortfall in rain, agricultural output declined by 16.5 percent. Cereal production and deficit were almost at the same levels as those in 2004. But this time, neither industries nor services grew at a level which could have offset the decline in agriculture sector. The real GDP growth dropped to an all-time low of 2.3 percent. The following year (2009), as climatic conditions were highly favourable, agricultural output increased by 23.3 percent, pushing the total output growth to 20.4 percent.

Other sectors, such as those in industries and services, do not seem to be causing strong volatility in GDP growth. First, because the weight of other sectors in GDP is smaller, and secondly, their growth is not as volatile as that of agriculture sector.

**Conclusion:** The above analyses show that growth volatility in Afghanistan is engendered by *supply-side shocks*, particularly by *climatic shocks*. Productivity shocks in the sub-sectors of industry and services do not have substantial impact on GDP (at least over the medium term), because their respective shares in GDP are still smaller compared to that of the agriculture sector.

### ***(iii) Overall macroeconomic instability***

In addition to volatility in growth and prices, the overall macroeconomic environment in Afghanistan has become more and more unstable in the last couple of years. Uncertainty concerning the economic environment has accrued, and prospects for the future of the economy and the country have highly deteriorated. Investment climate which kept improving until 2007 has since been degrading. According to AISA (Afghanistan Investment Support Agency), total initial capital invested in 2010 was only half of what it was in 2006 (\$1.2 billion).

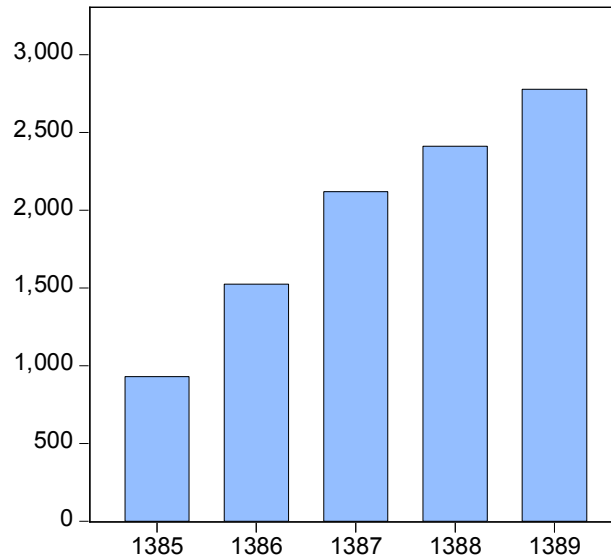
Essentially, there are three major factors which instigate and exacerbate macroeconomic instability in Afghanistan:

- Political shocks and instability
- Weak institutions
- Social fragmentation

Political instability may be the fundamental causal element behind the degradation of macroeconomic stability in recent years. Security has deteriorated severely since 2007, and the number of civilian deaths has almost doubled in 2010 (see Figure 3.3). The World Bank consistently decreased its political stability index for Afghanistan between 2003 and 2009, as shown in Table 2.9. Political shocks such as increased suicide attacks targeting

key political figures and governmental units, the announcement of withdrawal of NATO troops in 2014,<sup>1</sup> preliminary negotiations with the Taliban for a possible reconciliation,<sup>2</sup> and the recent tension between the executive, legislature and judiciary<sup>3</sup> have seriously affected macroeconomic stability in Afghanistan. Anwar al-Haq Ahadi, the Afghan Minister of Commerce and Industries, believes that such political tensions are the only cause of recent exchange rate depreciation.<sup>4</sup> In fact, empirical studies have found that political instability and political tensions increase macroeconomic instability and may affect long-term growth either directly, or indirectly through inducing economic volatility (Campos and Karanasos, 2007; Klomp and de Haan, 2009). Even though the relation between political shocks and economic instability may not be that strong in developed and stable countries, but in post-conflict countries such as Afghanistan this association is usually much stronger and significant.

**Figure 3.3: Number of civilian casualties**



Source: UNAMA Human Rights Report; guardian.co.uk

<sup>1</sup> <http://www.guardian.co.uk/world/2010/nov/20/nato-afghanistan-2014-withdrawal-lisbon> (accessed 13/07/2011)

<sup>2</sup> <http://www.nytimes.com/2010/09/29/world/asia/29afghan.html> (accessed 13/07/2011)

<sup>3</sup> <http://www.crisisgroup.org/en/regions/asia/south-asia/afghanistan/B117-afghanistans-elections-stalemate.aspx> (accessed 13/07/2011)

<sup>4</sup> [http://www.bbc.co.uk/persian/afghanistan/2011/07/110710\\_k02-afghani-currency.shtml](http://www.bbc.co.uk/persian/afghanistan/2011/07/110710_k02-afghani-currency.shtml) (accessed 13/07/2011)

Another major source of macroeconomic instability in Afghanistan is weak institutions. As explained in page 32, weak institutions produce and intensify macroeconomic instability via a variety of microeconomic and macroeconomic channels. When institutions are weak, the negative impact of exogenous shocks on the economy is amplified, and resources in the economy are expropriated by political elites. Undoubtedly, Afghanistan is an institutionally-weak country which lost its entire institutional infrastructure during its more than two decades of political crisis. Poor rule of law, inefficient judiciary system, widespread corruption, government inefficiency, absence of property rights, high degree of political instability, and absence of egalitarian and democratic rights are some of the most important institutional deficiencies in Afghanistan. The World Bank puts Afghanistan at some of the lowest percentile rankings for its World Governance Indicators, as shown in Table 2.9. These institutional quality indices show that some institutional indicators in Afghanistan improved between 2003 and 2007 but started to deteriorate after 2007. Transparency International downgraded Afghanistan from the 172<sup>nd</sup> position in 2007 to 179<sup>th</sup> in 2009 – out of 180 countries – for its Corruption Perceptions Index.

Weak institutions produce strong instability in the macroeconomic environment. On the one hand, they fail to stabilize the effects of external and exogenous shocks on the economy, and on the other hand, they are unable to resolve the idiosyncratic, economic and political problems that exist in the society. A pertinent example which perfectly portrays how weak institutions and corruption can destabilize the economy is the fraud and corruption scandal of Kabul Bank which broke out in summer 2010.<sup>1</sup> One of the largest private commercial banks in Afghanistan, Kabul Bank granted unsecured loans worth US\$ 925 million (including their accumulated interest) to high-ranking government officials and political elite without any collateral or even proper documentation. When the government officials learned Kabul Bank had initially lost \$300 million, an amount twice as much as the bank's capital, the Central Bank took over the bank in August 2010. Panic burst as depositors rushed to withdraw their money, and confidence in the financial sector was seriously hurt. The Central Bank injected funds into the bank to insure its solvency and to avoid any nationwide financial crisis. The IMF pressed for the bank being put at receivership, a proposal which the Central Bank effectively implemented in April 2011. However, the Ministry of Finance could not come to an agreement with the IMF which insisted on bailing out the bank with an \$810 million fund and taking its ownership until the bank is acquired by the private sector. The failure to meet IMF's demand prompted the World Bank and other

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<sup>1</sup> [http://topics.nytimes.com/top/news/business/companies/kabul\\_bank/](http://topics.nytimes.com/top/news/business/companies/kabul_bank/) (accessed 15/07/2011);  
<http://www.guardian.co.uk/world/2011/jun/16/kabul-bank-afghanistan-financial-scandal> (accessed 15/07/2011)

donors to withhold some \$70 million of their fund which most of it is used for the payment of government salaries. Notwithstanding the whole scandal, the trial of involved parties is yet to be done.

**Table 2.9: Institutional assessments of Afghanistan**

			2003	2007	2009
World Governance Indicators	World Bank	Percentile rank (0-100)			
Voice and accountability			9.1	16.3	10.0
Political stability			3.8	1.4	0.9
Government effectiveness			7.8	6.8	3.3
Regulatory quality			2.9	2.9	2.9
Rule of law			1.9	1.0	0.5
Control of corruption			1.5	1.9	1.4
Corruption Perceptions Index	Transparency International	World ranking: 180 countries	...	172	179
Institutional Quality Index	International Policy Network	World ranking: 191 countries	...	164	182

Hence, corruption involving a large network of political figures, the inability of institutions to detect and constrain such fraudulent activities by political elite, and finally the inefficiency of judiciary system to put into trial the involved parties led to collapse of confidence in the financial sector, to instability in the fiscal system, and to economy-wide instability and uncertainty.

Social fragmentation may also significantly contribute in macroeconomic instability. In a society where “fractionalisation” exists inside the government elite and where the institutions of conflict management are weak, non-cooperative powerful groups engage in a “redistributive struggle” which will result in national resources being allocated in non-taxable inefficient sectors. In such a country, powerful groups respond in a perverse way to exogenous shocks and hence these shocks will generate a more-than-proportionate consequences in the economy, generating instability and uncertainty in the macroeconomic environment (for more details, refer to page 25).

Afghanistan, too, is a country with deep social fragmentation, and fractionalization among the government elite. There are more than ten ethnic groups, and more than thirty spoken languages in Afghanistan. Although no national census has been conducted in Afghanistan, except for a partial census in 1979,<sup>1</sup> rough estimations indicate that Pashtuns are the largest group with 42 percent of population, followed by Tajiks 27%, Hazaras 9%,

<sup>1</sup> Source: “Afghanistan.” Encyclopaedia Britannica. DVD version. Ultimate Reference Suite 2010

Uzbeks 9%, and other smaller groups accounting for the rest of the population.<sup>1</sup> Pashto and Dari (Persian) are the official languages of the state, and other six major languages become the third official language – in addition to the two previous – in areas where they are spoken by the majority of people. Persian/Dari which is spoken by almost half of the population<sup>1,2</sup> serves as the *lingua franca* for the speakers of different languages in the country.<sup>2</sup>

Although dissensions exist more or less between all ethnic groups, rivalry between the Pashto-speaking Pashtuns and the Persian-speaking Tajiks and Hazaras is more visible at the political sphere. In a pluralistic society in which no group forms the majority (per its definition of forming more than half of the individuals) tensions are usually high. Historically, tensions in Afghanistan aroused in the first half of the 20<sup>th</sup> century when in 1936 the government imposed Pashto as an official language in addition to Persian. Civil war subsequent to the Russian withdrawal in 1989 accrued ethnic conflict as parties involved in the war were formed based on ethnic and regional relations. Although since 2002 ethnic tensions have soothed and the new constitution in 2004 recognized equal rights for all ethnic and linguistic groups, fractionalisation among the political elite is still largely present. Several ministers have so far been accused by their opposition groups for exploiting their power in favour of their own ethnic groups. Such fractionalisation among the government officials, involved in high-level decision-making process, ends up in disagreements over both political agendas and economic measures, which, by itself, creates instability in political and economic environments. One example of such political process is disagreement over the ongoing negotiations with the Taliban. Furthermore, as Tornell and Lane (1999) explained, powerful groups dynamically interact and maintain discretionary fiscal redistribution to allocate national resources in favour of their own groups. In fact, several such instances have taken place in Afghanistan, and several political figures are accused by various groups or individuals for expropriating the resources.

As stated earlier, social fragmentation and political fractionalisation interact with weak institutions of conflict management and thus generate instability in macroeconomic environment. And social fragmentation in Afghanistan is one of the important sources of instability in the country that has to be addressed.

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<sup>1</sup> Source: The World Factbook. CIA

<sup>2</sup> Sources: “Dari language.” Encyclopaedia Britannica. DVD version. Ultimate Reference Suite 2010; and “Dari.” UCLA Language Materials Project. <http://www.lmp.ucla.edu/Profile.aspx?LangID=191&menu=004> (accessed 16/07/2011)

## 2.2. Solutions

Previous section identified six *major* factors which induce macroeconomic instability in Afghanistan, namely:

- 1) Supply-side shocks
- 2) Terms-of-trade shocks
- 3) Low degree of diversification
- 4) Weak institutions
- 5) Political shocks and instability
- 6) Social fragmentation

In this section, I propose a series of economic and structural policies which can help reduce volatility in the economy and ensure a long-term macroeconomic stability for the country. I do not engage, however, in discussing how to control political shocks and to bring about political stability. For, that is the objective of political science which requires its own set of rules, methods and analyses, which are out of the scope of this dissertation. I presume, henceforth, that the political actors in Afghanistan (i.e. government, international community, political parties, and civil society) will be able to find a political solution to the fifth source of instability, noted above.

To overcome the remaining five sources of instability mentioned above, I propose a set of four different policies that, if implemented altogether, would significantly improve macroeconomic stability in Afghanistan. These policies are to:

- 1) Stimulate output in “key” output sectors
- 2) Diversify the production structure
- 3) Promote strong, efficient and democratic institutions
- 4) Develop sound financial sector

I sufficed to enlist only the most important and crucial policies needed to help overcome macro instability in Afghanistan. These can be further accompanied with complementary policies, such as creating risk-insurance mechanisms, pursuing stable and anti-cyclical policies, and enhancing automatic-stabilizers.

For the four recommended policies, I will only provide general strategies and directions, and I will not engage in discussing all possible “instruments” for each of them, because doing so will open the discussion to vast areas of literature and policy research, which is totally out of the capacity of this work and goes beyond its objective.

### ***(i) Stimulating output in “key” sectors***

One way to tackle the supply-side and terms-of-trade shocks is to stimulate output in *key* sectors. By “key” I mean sectors which have the potential to overcome as many sources of instability as possible and to ensure a stable and sustainable growth over the long-term. I identify two sectors which can fulfill these functions; i.e. agriculture and natural resources sectors.

***Table 3.0: Expected outcome from key sectors***

<b>Sector</b>	<b>Outcome</b>
Agriculture	<ul style="list-style-type: none"><li>• Stabilises output growth</li><li>• Ensures a sustainable economic growth</li><li>• Significantly decreases poverty</li><li>• Reduces exposure to terms-of-trade shocks</li><li>• Reduces the impact of supply-side shocks</li></ul>
Natural resources	<ul style="list-style-type: none"><li>• Increases fiscal revenue and improves fiscal sustainability</li><li>• Reduces unemployment</li><li>• Improves Balance-of-Payments position</li><li>• Increases foreign exchange reserves</li></ul>

### **A. Agriculture sector**

As explained in page 59, growth volatility in Afghanistan is *primarily* generated by volatility in agricultural output. Thus, stimulating output in the agriculture sector – and keeping it stable – will totally stabilise the real GDP growth. This would also avoid all sorts of volatility costs in terms of welfare loss and increase in inequality. Furthermore, obtaining a sustainable growth in Afghanistan is only possible if a stable agricultural growth is maintained and guaranteed. Agricultural growth is the key to a long-term sustainable growth in the country.

Since the Green Revolution in Asia in 1960s and 1970s, the “dual economy” theory – in which agriculture was viewed as a traditional and low-productivity sector contributing passively to economic development – has been swept aside. The possibility of transforming traditional agriculture to modern sector under the Green Revolution proved agriculture’s



potential as a source of growth and development. In an agriculture-dependent economy such as Afghanistan, only the agriculture sector has sufficient scale and growth-linkages to significantly influence growth. In fact, an important factor for determining the contribution of an output sector to economic growth is its linkages with the rest of the economy. Agriculture sector is found to have strong growth-linkages in many countries (Diao et al., 2010). I believe, given the current structure of the Afghan economy, this holds true for Afghanistan as well.

**Table 3.1: Different sectoral scenarios**

	5-year average (2005-2009)			2009	2030	
	Growth	Share in GDP			Scenario 1	Scenario 2
Agriculture	7.7	33.7	Real GDP ( <i>million Af.</i> )	374,367	7,094,590	5,948,756
Industries	12.5	24.1	Real GDP per capita	12,274	126,916	106,418
Services	15.4	39.4	( <i>in Afghanis</i> )			

The right section of Table 3.1 gives two different scenarios. Scenario 1 assumes a 10-percent higher-than-average growth rate for the Agriculture sector through 2030 while keeps constant the average growth rate for other sectors. Scenario 2 assumes a 10-percent higher-than-average growth rate for the Industries sector through 2030 while keeps constant the average growth rate for other sectors. According to Scenario 1, the real GDP will reach Af. 7 trillion in 2030, while according to Scenario 2, this figure will be nearly Af. 6 trillion. Hence, a 10-percent growth in the agriculture sector will buy Afghanistan an *additional* 19.3 percent gain in real income within twenty years, compared to if the growth came from the industries. Despite the fact that these scenarios are based on very basic assumptions (for example assuming that the agriculture sector's share will remain the same), it does show that the difference in gain between growth generated from the agriculture sector and growth generated from the industrial sector is significantly large in the agriculture-dependent Afghanistan.

Surveys indicate that 59 percent of employed Afghan population is engaged in agriculture sector (NRVA, 2009). Estimates put 85 percent of total population somehow dependent on income received from agriculture-related activities.<sup>1</sup> Yet 36 percent of Afghan population falls below the poverty line. Figures show that 35.5 percent of households engaged in agriculture-related activities are identified as poor. Therefore, agriculture sector has the highest momentum to fight poverty. If all poor households engaged in agriculture

<sup>1</sup> Source: FAO, [http://www.fao.org/emergencies/country\\_information/list/asia/afghanistan/en/](http://www.fao.org/emergencies/country_information/list/asia/afghanistan/en/) (accessed 20/07/2011)

sector are taken out of poverty, then roughly 20 to 30 percent of the poor are elevated above the poverty line – which is a great achievement. Thus, agriculture sector is the most appropriate source for pro-poor growth in Afghanistan (Flaming and Roe, 2009).

Earlier section also found that the largest terms-of-trade shocks come from the trade in food items, especially shocks to world prices of cereals. If Afghanistan becomes self-sufficient in cereal production, especially in wheat production, then its exposure to terms-of-trade shocks reduces significantly.

### *Is there a potential for output boom in agriculture sector?*

There are 7.9 million hectares of *arable* land in Afghanistan which make almost 12 percent of total land area in the country. However, just under half of arable land is cultivated. Almost 1.8 million hectares are irrigated, while the rainfed cultivated area is 1.7 million hectares.<sup>1</sup> In 1978, there were more than 3 million hectares of irrigated land, but due to continuous war and several instances of drought, this proportion has declined by more than 60 percent today (Flaming and Roe, 2009). The productivity of irrigated cultivation is far higher than that of rainfed. Irrigated cultivation represents more than 80 percent of total cereal production, and its average yield rate is 2.5 tonnes per hectare.<sup>2</sup> Hence, more than half of arable land (4.4 million hectares) is left uncultivated and unused in Afghanistan.

The most major obstacle to crop cultivation in Afghanistan is poor irrigation system. Surveys show that 65 percent of those household farmers who left part of their irrigated land fallow (uncultivated) reported lack of water as the main reason (NRVA, 2009). However, water resources assessments show that there are sufficient water resources in Afghanistan and if they are well-managed, they could respond to all requirements in agriculture.

Average annual volume of water in Afghanistan is estimated at 95 billion m<sup>3</sup> of which 88 percent is surface water and 12 percent groundwater (Rout, 2008). There are five major river basins in the country (including Oxus or Amu Darya, Northern basin, Hari Rod & Murghab, Helmand, and Kabul) which provide water to 86 percent of irrigated area through formal and informal irrigation systems. Formal irrigation system consists of ten large-scale irrigation schemes, administered by the government, which cover only 333,000 hectares of land – almost 18 percent of irrigated area. However, informal irrigation systems based on surface water (including river and streams) and administered by regional communities cover the largest proportion of irrigated land. From among 83 billion m<sup>3</sup> of surface water flowing in the country per year, only around 17 billion m<sup>3</sup> was in use a decade ago. With the

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<sup>1</sup> Source: Afghanistan Statistical Yearbook 1389, CSO

<sup>2</sup> Source: Agriculture Prospects Report, FAO/MAIL

rehabilitation of pre-war irrigation systems and improved management, water use is estimated to increase to 35 billion m<sup>3</sup> per year (Rout, 2008). Assessments show that there is much potential for further usage of surface water for irrigation in Afghanistan (Rout, 2008; King and Sturtewagen, 2010). If the irrigation system is expanded, improved and better managed, then most of Afghanistan's arable area could be cultivated.

Nonetheless, I do not uniquely suggest agricultural expansion. In fact, intensification of agricultural production through increasing productivity and adopting suitable technologies may be more productive and efficient than simple land expansion. Agriculture sector in Afghanistan still operates in a very traditional form, using very basic technology, and at a very low level of productivity. Thus, transfer of technology and its application to the agro-ecological condition of Afghanistan, development of supply chains around small-scale farmers, and modernising the agriculture sector will be a more productive and imperative strategy.

Finally, with better irrigation system, higher productivity, and with modern and efficiently adopted technology (including drought-tolerant and flood-resistant seeds, more efficient fertilisers, modern machinery, etc.), the agriculture performance would depend less on timely rainfall. Hence, the impact of supply-side and climatic shocks on the Afghan economy will significantly decline.

## **B. Natural resources**

Another key sector which can play an important role in macroeconomic stability in Afghanistan is the mining sector – under the condition if it is coupled with efficient institutional arrangements. The dynamics of the mining sector in Afghanistan is manifold. First, it will generate immense fiscal revenue for the government and will eliminate the huge fiscal deficit which is nearly 10 percent of GDP (ignoring the foreign grants). It will help Afghanistan achieve its fiscal sustainability without putting any constraint over spending. Secondly, through boosting exports and acquiring FDI (Foreign Direct Investment), it will decrease the trade deficit of nearly 40 percent of GDP and will significantly improve the balance-of-payments position of the country. It will also increase foreign exchange reserves of the central bank, and will prevent any balance-of-payments crisis subsequent to shocks in foreign aid. Finally, by attracting huge FDI in the country it will provide employment to thousands of skilled and non-skilled workers in the country and will help reduce unemployment.

The total value of mineral deposits in Afghanistan has been estimated between US\$ 1 and \$3 trillion.<sup>1</sup> Geological Surveys by the US and the UK have shown that Afghanistan holds huge deposits of iron ore, copper, cobalt, gold, lithium, niobium, uranium, mercury, barite, chromites, and zinc. The deposits of copper and iron ore are some of the largest in the world, consisting of 60 and 2,200 million tonnes, respectively. The amount of lithium in Afghanistan is also significant, as official US sources have stated that Afghanistan could become the “Saudi Arabia of lithium.” Surveys have also shown that there are huge blocks of oil and natural gas in northern Afghanistan. It is estimated that there are 3.4 billion barrels of crude oil,<sup>2</sup> 444 billion cubic meters of natural gas, and 562 million barrels of natural gas liquids in the country.<sup>3</sup> Moreover, precious and semi-precious stones such as high-quality emerald, lapis lazuli (of which Afghanistan holds the largest and the unique-quality reserves in the world) and ruby are found in huge volumes in Afghanistan.<sup>4</sup>

Almost all these mineral and fuel resources are untapped. Only in 2008 did the Afghan government award the Aynak copper deposit to a Chinese firm under a US\$ 3.3 billion deal. The 30-year lease will provide the government with \$400 million in royalties each year, in addition to \$800 million down payment from the developer. The production is scheduled to start in 2013, and the project is expected to create some 6,000 direct employment opportunities. Nonetheless, if other mineral and fuel deposits are awarded to the private sector in the same manner, the natural resources sector could turn into an engine of economic growth and a principal source of fiscal revenue for Afghanistan. Official estimates show that annual revenue from mines will reach \$1.5 billion in the next five years and \$3.5 billion within a decade and a half.<sup>5</sup> However, this dissertation argues that current benchmarks are still modest. Potentials in the mining sector are promising, and if more efforts are made, the outcome will be much higher.

### *How to avoid the natural resource curse in Afghanistan?*

Natural resource abundance *does not always* lead to high economic growth and better macroeconomic stability. Some resource-rich countries in the world, such as Nigeria, Venezuela and Bolivia, were not able to achieve satisfactory growth performance and are

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<sup>1</sup> <http://www.nytimes.com/2010/06/14/world/asia/14minerals.html> (accessed 21/07/2011) and <http://www.telegraph.co.uk/news/worldnews/asia/afghanistan/7835657/Afghanistan-claims-mineral-wealth-is-worth-3trillion.html> (accessed 21/07/2011)

<sup>2</sup> <http://english.aljazeera.net/news/asia/2010/08/20108159431776396.html> (accessed 21/07/2011)

<sup>3</sup> Source: “Assessment of Undiscovered Petroleum Resources of Northern Afghanistan.” Fact Sheet 2006-3031. USGS. March 2006

<sup>4</sup> Source: “Preliminary assessment of non-fuel mineral resources of Afghanistan.” Fact Sheet 2007-3063. USGS. October 2007

<sup>5</sup> <http://www.pajhwok.com/en/2011/05/31/revenue-mines-reach-15b-5-years-shahrani> (accessed 21/07/2011)

faced with many development challenges. Empirical studies indicate three major problems with natural resources. First, natural resource exploitation leads to an appreciation of the real exchange rate which, in turn, negatively affects the exports. The deterioration of terms of trade subsequent to natural resource exploitation is called the “Dutch Disease,” named after the Netherlands’ experience in the 1970s when the prices of tradable goods increased and the manufactured exports declined after that they started extracting their resources. The second problem associated with the natural resources is that they generate “rents” and encourage rent-seeking behaviour in the economy. As a result, resources are not invested in productive and efficient sectors and thus it leads to a dampening of growth in the long-run. Finally, natural resources make democracy malfunction and resource-abundant countries tend to have autocratic governments. In fractionalised countries (with multiple ethnic groups), natural resources have been a source of conflict and political instability.

These three factors associated with natural resources have popularised the concept of “natural resource curse.” Recently, studies have tended to support a new theory of natural resources. It suggests that there is an *indirect* relationship between natural resources and economic growth. Natural resources affect economic growth through the channel of “institutions” (Easterly and Levine, 2002; Sala-i-Martin and Subramanian, 2003; Isham et al., 2003). In institutionally weak countries, natural resources encourage corruption, further damage the institutional quality, and reduce the government’s aptitude in bringing structural reforms in the fiscal sector, in diversifying their economies and in seeking long-term growth strategies. It is through these institutional deficiencies that natural resources affect economic growth.

Hence, one way to avoid the “curse” of natural resources is to improve the quality of institutions in the country, such as increased transparency and accountability, effective rule of law, efficient judiciary system to constrain corruption and rent-seeking, higher capacity in government institutions, and promotion of democratic institutions. Nevertheless, these institutional reinforcements need to be supported by measures to build “social capacity and political consensus” in resource abundant countries (Woolcock et al., 2001). Only by doing so, the negative impact of natural resources on institutions could be overcome. More details on the institutions will be discussed in the next sub-sections.

Economists have also proposed various economic measures which could help overcome the negative macroeconomic effects of natural resources.<sup>1</sup> Some economists have

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<sup>1</sup> Rosser (2006) has provided a good synthesis of major recommendations that have been made to overcome the resource curse.

suggested that resource-rich countries should distribute all their natural resource revenues directly to the citizens (Sala-i-Martin and Subramanian, 2003). Their argument is that by transferring the “rents” to the citizens, there will not be any incentive for corruption and misappropriation within the government. The objective is to transform the resource-abundant country to a “non-resource abundant” country in which there will be no windfall revenue that would encourage rent-seeking and corroding behaviour.

Another group of economists have argued in favour of privatising the natural resources sector. These economists maintain that privatisation may limit rent-seeking, and the government will have less opportunity for excessive spending and borrowing. Weinthal and Luong (2001) have emphasised that privatisation offers a potential path out of the resource curse “only if it involves a transfer of ownership to domestic interests.” That is due to the relative bargaining power between the state and the private companies. Foreign companies have a bargaining advantage vis-à-vis the state only in the short-run because the government needs capital to develop its resources. But once the foreign investors had their capital sunk in the country, the bargaining power shifts to the government. However, the domestic investors are present in the country over a long-term, and thus they help develop a viable tax system in the country because both the government and the domestic companies need one another to survive. Therefore, although privatisation may offer a way out of the resource curse, it has a “more positive impact on the development of tax regimes when the transfer of ownership is to domestic investors.”

There have also been suggestions that resource rents could be allocated to the export sector which is affected by the Dutch Disease. The rents could be targeted at lowering the costs of exports. For example, natural resources surplus can be used in improving transportation infrastructure which could lower the transportation costs, or can be used to build export processing zones (EPZ) that can boost economic activity through economies of agglomeration. Another way to offset the Dutch Disease is to spend the resource rents on activities that have large import content. In this case, it will prevent the appreciation of exchange rate. These activities vary from one country to another, depending on its trade and production structures. In low-income countries, sectors such as transportation, infrastructure, and communications have generally high import content.

Natural resources could also create serious macroeconomic instability through the fiscal channel, following volatility in world commodity prices. During a price boom, as the fiscal revenues increase, the government increases overall spending and initiate new projects which take a few years to complete. When the prices crash, the government finds it extremely

difficult to reduce the spending – due to political and social constraints – and the undergoing projects are left uncompleted owing to a lack of financing. Therefore, the boom and busts in world commodity prices generate strong volatility in the economy and may increase external debt. Some economists have thus suggested that resource-rich countries need to diversify their economies so as to reduce their dependence on natural resources. Others have recommended the creation of “stabilisation funds,” such as those in Norway and Kuwait, in order to reduce the impact of shocks to commodity prices. However, in countries with widespread corruption and lack of transparency and accountability, this option seems less productive.

To conclude based on the above suggestions, I emphasise there are many possible ways for Afghanistan to overcome the natural resource curse. Afghanistan has already opted for the privatisation of the mining sector which will limit corruption and rent-seeking. Since Afghanistan’s chief exports are agricultural or agriculture-related products, the natural resources rents could be allocated to the agriculture sector in various forms without necessarily discriminating between the exporters and non-exporters. Moreover, improving the quality of institutions is an indispensable step for Afghanistan. In fact, not all institutionally-weak countries which discovered their natural resources fell into the resource curse. Countries such as Botswana, Indonesia and Mexico had weak institutions at the time they started their resource extraction, but they all succeeded to improve and strengthen their institutions and to overcome the resource “curse.” Other economists, too, have not shown a total pessimism for the discovery of natural resources in Afghanistan, despite the current state of affairs in the country. As one economist puts it, while it “is not overly encouraging for Afghanistan it is not completely gloomy either” (Beckman, 2010). “Afghanistan's potentially vast mineral resources are no guarantee of democracy and prosperity. But they do not condemn this country to eternal corruption, poverty and war either” (Haber and Menaldo, 2010).

### **Remarks on sectoral-growth approach:**

The recommendation made in this section is basically a *sectoral approach* to growth. However, this should not be conceived as a policy calling for a privileged status or a favoured treatment to the chosen sectors. The objective is to simply remove the institutional barriers and constraints in those sectors which have the potential to increase the overall growth in the economy. Growth will not be limited uniquely to the chosen sectors but, in fact, growth will also be generated in other sectors due to growth-linkages which exist between them.

The role of the government is double-folded in this approach. First, it has to identify the “key” sectors in the economy, and secondly it should identify and remove the constraints and distortions in these sectors so that market is made to function in them (Chandra, 2006). The former suggests that the selection of sectors be based on the criteria that they will generate economy-wide growth. The latter not only requires that the government identifies the existing institutional constraints and economic distortions, but also that it addresses the problem of “coordination externalities.” In fact, many sectors require simultaneous, large-scale investments to be made, in order to become profitable and to attract private investors. Coordination failures can arise whenever a sector exhibits scale economies. Dani Rodrik (2007) has explained that, in the presence of coordination externalities, government will be required to coordinate the investment and production decisions of entrepreneurs. Thus, in the case of Afghanistan the government needs to make large-scale investments in the sectors of agriculture and natural resources so that it would be able to attract private investment in these sectors. However, Rodrik (2007) emphasises that the appropriate policy is the one which is targeted on “activities” which produce the characteristics of a coordination failure, rather than on sectors per se. This facilitates structuring the public support “as a corrective to specific market failures instead of generic support for this or that sector.” He explains that only those activities should be selected which have “the potential to crowd in other, complementary investments or generate informational or technological spillovers.”

On this question whether the government in Afghanistan should target a sector or a specific activity, I argue that, under the current framework proposed for the correction of macroeconomic instability, it is more appropriate that the Afghan government targets the sectors of natural resources and agriculture as a whole. The objective in here is to achieve the desired “outcome” from each sector in order to overcome the relevant sources of instability.

As stated in the beginning of this section, I do not intend to specify the relevant policy instruments for the selected key sectors. For, that requires a more thorough study of sector-specific constraints and opportunities. In the following, I briefly present some general strategy points which seem necessary to be highlighted. First of all, to borrow the words of Rodrik, the government needs to embed private initiative in a framework of public action that encourages economic development and technological dynamism beyond what market forces on their own would generate. Both ‘overly relying on a free-market mechanism supposed to meet all expectations in an economy with numerous distortions,’ and ‘reviving the old protectionist practices of the country’ will be worse choices for Afghanistan. The right model is to seek a “strategic collaboration between the private sector and the government with the



aim of uncovering the most significant obstacles to restructuring and determining what interventions are most likely to remove them” (Rodrik, 2007).

A proper strategy for the natural resources sector in Afghanistan is to privatise the mining projects – but not other resources such as forests – and to equally consider the domestic interests besides the foreign investors. However, strengthening the institutions must be the ultimate task of the government. Promotion of check-and-balances and creating an accountable and transparent environment are keys to overcoming the resource curse. Next, the surplus obtained from the natural resources sector should be allocated for development projects, especially in those projects and activities which have high-import content – this is for avoiding the Dutch Disease. The resource rents should be primarily targeted at the exports sector – which happens to be the same as the agriculture sector; almost all major Afghan export items are agriculture or agriculture-related products, e.g. dried fruits, fresh fruits, animal products, and carpets. These rents can be allocated in various forms such as financing projects for infrastructure and irrigation systems, modernising the agriculture sector, conducting research and development, creating processing units for raw agricultural materials, or simply providing subsidies to farmers. If the provision of subsidies to farmers does not discriminate between the exporters and non-exporters or between the exported items and non-exported items in the agriculture sector, then it will not violate the international laws and agreements. Although international regulations (for ex. WTO’s Agreement on Subsidies) authorise export subsidies for countries with GNP per capita of less than \$1000 per year. Moreover, the government should adopt policies aimed at intensifying the agricultural production by increasing productivity and adopting the technologies appropriate for Afghanistan’s agro-ecological condition, developing supply chains around small-scale farmers (such as input markets, seasonal finance, and marketing systems), modernising the agriculture sector, and finally expanding the cultivated land.

## ***(ii) Diversifying the production structure***

Section II.2.1. also diagnosed that the great exposure of the Afghan economy to external shocks is one of the major sources of macroeconomic instability in the country. This exposure is due to low level of diversification in the production structure. When the economy is less diversified, the impact of terms-of-trade shocks on the economy is intensified. Hence, diversification helps reduce the negative effects of external shocks which are transmitted through the trade channel.

In an important paper, Jean Imbs and Romain Wacziarg (2003) examined the patterns of sectoral concentration and diversification in a large cross-section of countries. They found that “sectoral concentration follows a U-shaped pattern in relation to per capita income” – a finding which does not go along with most existing theories, as the latter predicts a monotonic relationship between income and sectoral concentration. Their findings show that early in the development process, countries diversify and this continues until a relatively late stage of development. When countries reach a level of per capita income roughly equal to \$9000 (in 1985 constant US dollars), they start specialising. They emphasized that “increased sectoral specialization, although a significant development, applies only to high-income economies. Countries diversify over most of their development path.”

Diversification of the production structure requires “discovery” of an economy’s cost structure – that is, discovery of which new activities can be produced at low enough cost to be profitable. Ricardo Hausmann and Dari Rodrik (2003) have called this process as “self-discovery” – learning what a country is good at producing. In fact, investment in new activities and in new sectors has a large social value. But their private return is too low, because the first entrepreneur who invests in a new activity will have to share the value of his discovery with other entrepreneurs who will quickly emulate. Conversely, if his investment in the new activity fails to be profitable, he will bear the full cost of his failure. Thus, learning what a country is good at producing requires an investment, but the returns to that investment are not fully appropriated. Hausmann and Rodrik explain that free entry by competitors (i.e. imitators or copycats) “makes the nonappropriability problem worse, and undercuts the incentive to invest in discovering what a country is good at producing. Laissez-faire cannot be optimal solution under these circumstances,” just as it is not in the case of new innovations in advanced countries, and that’s why they are protected by patents.

The framework which Hausman and Rodrik have proposed highlights that entrepreneurship in underdeveloped countries may have been constrained by inadequate inducements to discovery costs in new activities, and not mainly by inadequate property rights or lack of access to imported technologies. The new discoveries in developing countries does not involve coming up with new products or processes, but “discovering” that a certain good, already well established in world markets, can be produced at home at low costs. This may require some “technological tinkering” to adapt foreign technology to domestic conditions, but rarely this technological tinkering is patentable and therefore monopolisable (Rodrik, 2007). Furthermore, transferring a certain technology to a new economic and institutional environment has always an uncertain probability of success.

This constraint to the self-discovery process is nothing but “information externalities.” Information externalities, along with “coordination externalities” which was explained in page 75, are the two factors which blunt the incentives for productive diversification. “Both are reasons to believe that diversification is unlikely to take place without direct government intervention or other public action” (Rodrik, 2007). Thus, the government needs to “encourage entrepreneurship and investment in new activities ex ante, but push out unproductive firms and sectors ex post” (Hausmann and Rodrik, 2003).

The first-best policy response to the informational externalities that restrict self-discovery is to subsidise investments in new activities. This can be done though providing public credit or guarantees, public R&D, temporary monopolies, tax incentives, or even trade protection (Rodrik, 2007). Although the proposition of these sets of instruments is basically an industrial policy, but I propose nothing more than a “strategic coordination” between the government and the private sector in order to find the underlying costs and opportunities of new discoveries in Afghanistan. The choice of instruments in this context must be made with more prudence because they may create other distortions in the economy and are subject to moral hazard if they are not well calculated and well designed.

Given the current constraints, barriers and obstacles for self-discovery in Afghanistan, diversification could only be possible if the private sector is provided with incentives from the government. But close watch must be paid because “any system of incentives designed to help private investors venture into new activities can end up as a mechanism of rent transfer to unscrupulous businessmen and self-interested bureaucrats” (Rodrik, 2007). Therefore, the policy should be embedded in an appropriate institutional context so that corruption and rent-seeking behaviour are fully prevented.

At first look, the first two proposed policies aimed at correcting macroeconomic instability in Afghanistan might seem in contradiction. Whilst the first policy encourages sectoral concentration and specialisation (in agriculture and natural resources), the second policy goes in the opposite direction. But in fact, the first policy should be considered in the same context as the second one; both policies aim at discovering the productive potential of Afghanistan, and most of its potentials lie in the sectors of agriculture and natural resources. In addition, the first policy comes in support of and as a means to achieve the second one. Increasing agricultural and mining output will help stabilise the macroeconomic environment – which is a necessary condition for attracting entrepreneurs to new activities – and will provide the government with sufficient funds (i.e. resource rents) to support the private sector in discovering new potential activities.

### ***(iii) Acquiring high-quality institutions***

Having high-quality institutions will not only dissipate the adverse effects of external shocks, and hence help stabilise the macroeconomic environment, but will also help contain the social conflict and the redistributive struggle of political elite triggered by social fragmentation. Having strong, efficient and democratic institutions is also a condition for getting “blessed” by natural resources instead of getting “cursed” by it. But which type of institutions should Afghanistan try to develop and acquire? and what is the best way of getting such institutions? <sup>1</sup>

New Institutional Economics maintain that markets need to be supported by non-market institutions because markets are not self-creating, self-regulating, self-stabilizing, or self-legitimizing. Thus, in order for markets to function well, there need to be five types of market institutions alongside the markets: property rights, regulatory institutions, institutions for macroeconomic stabilisation, institutions for social insurance, and institutions of conflict management.

The role of the first three types of market-supporting institutions in a market economy is well understood: property rights are necessary to guarantee an adequate *control* over the return to the assets (e.g. an innovation) that are produced by entrepreneurs; regulatory institutions curb fraud, anticompetitive behaviour, and moral hazard; and institutions for macroeconomic stabilisation help smooth out the real, financial, monetary and external shocks in order to provide a stable and predictable environment for economic activity. However, institutions for social insurance are also necessary because they legitimise a market economy by rendering it compatible with social stability and social cohesion. In fact, economic reforms based on a market-oriented system are often met by resistance from people in developing countries. The result is usually economic and social insecurity. Thus, institutions of social insurance help achieve a social cohesion in the country. Finally, institutions of conflict management are also indispensable, because countries can well get caught – sometime in their history – by instances of conflict among social factions. The rule of law, high-quality judiciary system, representative political institutions, free elections, independent trade unions, social partnerships, and institutionalised representation of minority groups are examples of such institutions. They tend to increase the incentives for social groups to cooperate by reducing the payoff to socially uncooperative strategies.

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<sup>1</sup> The next paragraphs are largely based on Rodrik’s (2003) articles entitled “Institutions for High-Quality Growth” and “Getting Institutions Right.”

The most important point is that there is no unique type of institutions for a market economy. There is a large variety of regulatory, stabilizing, and legitimizing institutions that can support a well-functioning market economy. The acquisition of institutions depends on local knowledge, experiences and capabilities. Institutions need to be developed locally – they cannot be independent of a country's history, culture and social norms. But one can always learn from the institutional arrangements prevailing in other countries – best practices, and international codes and standards can always help.

In all cases, the development of institutions must be based on *democratic* structures. Participatory political institutions are proven to deliver a stable long-term growth, a greater short-term stability, a better management of adverse shocks, and a better wealth distribution in the economy. Democracy, which can be considered as a *metainstitution*, helps build better institutions compared to autocratic regimes.

#### ***(iv) Developing sound financial sector***

The presence of a sound, healthy financial sector is a vital element for private-sector development, and crucial for the implementation of the earlier policy; i.e. diversification of the economy. Entrepreneurial talents and new ideas exist in every country, but what lacks in some countries is access to capital. Sound financial intermediaries can provide such funds for productive investments. Not only does financial development increase economic growth, it also reduces the impact of exogenous shocks by offering economic agents mechanisms for self-insurance and hedging.

A good strategy for financial deepening would involve mobilising a larger volume of savings from the domestic economy (i.e. increasing the ratio of national savings to GDP) and enhancing the accessibility of capitals for all types of domestic investments. The essence of financial deepening is to aim at having positive *real* interest rates or, at least, to avoid sharply negative real rates. However, in the presence of volatile inflation rate, this seems a difficult task – and risky, too – but it demands an efficient monetary policy system. Moreover, commercial banks are good at providing *short-term* credits, but longer-term investment requires longer-term finance. Therefore, financial institutions specialising in longer-term finance – such as insurance companies, investment banks, and security markets – are also indispensable for the economy. In this case, the intervention of government is required to develop such institutions, especially for the security markets.

The most important of all is to have a strong financial regulation and supervision system. Especially as commercial banks in Afghanistan keep expanding and will eventually

start investing abroad, adequate system of prudential regulation and effective supervision is essential to prevent any crises in the banking sector due to systemic risk and/or external financial shocks. Strengthening prudential supervision requires a variety of institutional reforms, including an exposure limit on lending to connected parties (most importantly owners and affiliated companies), – the lack of which was the main factor behind Kabul Bank’s failure (see page 63) – fixing a criteria for provisioning of nonperforming loans, preventing concentration of credit to single borrowers, emphasising for collateral requirements, and raising *bank capital* to levels commensurate with the volatile macroeconomic environment in the country.

Although important banking sector reforms have so far been implemented by the Central Bank (Da Afghanistan Bank), still much more effort must be paid. Developing an adequate legal framework, encouraging better public disclosure of banks’ financial condition, creating better transparency, implementing better financial reporting standards, and finally ensuring better contract enforcement are some of the critical reforms that must be undertaken in Afghanistan. Pavlović and Charap (2009) studied the commercial banking system in Afghanistan and reported that the country lacks adequate legal framework for the financial sector. The authors also highlighted that some weak commercial banks “engage in extra-judicial, non-traditional contract enforcement.” The financial services that these banks are providing are, in fact, lacking in the system. The authors concluded “it appears crucial that DAB strengthen further its prudential oversight.”

## Conclusion

Macroeconomic instability which is seen as an endemic phenomenon in developing countries has become a first-order issue of interest in development macroeconomics in recent years. Macroeconomic instability can be defined as a situation where: (i) unsustainable imbalances appear in the economy; (ii) variability in key macroeconomic variables is large (i.e. exceeding a certain threshold); and/or (iii) macroeconomic environment is highly uncertain. Empirical studies have identified numerous factors which instigate and exacerbate macroeconomic instability, such as terms-of-trade shocks, supply-side shocks, costly market-access, geographical remoteness, social fragmentation, higher degree of trade openness, financial underdevelopment, sudden and unregulated financial integration, weak institutions, low degree of diversification, distortionary macroeconomic policies, aid volatility, and

microeconomic rigidities. These sources of instability are not mutually exclusive, and may interact in various ways.

This dissertation argued that the effects of external (such as terms-of-trade shocks or aid volatility) and internal shocks (such as climatic shock or productivity shocks) are determined by the structural characteristics of the economy which act as a risk-management mechanism. Well-developed financial sector, well-managed capital-account liberalization, higher export and production diversification, lower market-access costs, strong and efficient institutions, and “good” policies may decrease the negative effects of exogenous shocks. The paper also explained that macroeconomic instability is both a cause and a reflection of underdevelopment. Whilst macroeconomic instability negatively affects the long-term growth and thus development, it is also the result of the co-existence of various ‘underdeveloped structures’ in the economy. Therefore, dealing with macroeconomic instability should be an important part of development strategies, and only a mix of stabilisation and structural policies will be able to effectively overcome instability. Studies have also shown that macroeconomic instability has *significant* costs in terms of welfare loss, increase in inequality and poverty, and reduction in long-term growth.

The case study focused on macroeconomic instability in Afghanistan. Through a diagnostic approach to the issue, it identified the sources of instability in Afghanistan and proposed a series of policies and reforms in order to overcome macroeconomic instability in the country. It identified that terms-of-trade shocks, supply-side shocks (mainly climatic shocks), low degree of diversification, weak institutions, political instability and shocks, and social fragmentation are the principal sources of instability in Afghanistan. To overhaul these sources of instability, the government should (1) stimulate output in key sectors, namely agriculture and natural resources sectors; (2) diversify the production structure of the economy; (3) acquire high-quality institutions; and (4) develop a sound, healthy financial sector.

Agriculture sector is the key to long-term, stable growth in Afghanistan because it is the only sector which has sufficient scale and growth-linkages in the economy to ensure a sustainable growth. Natural resources, on the other hand, will help Afghanistan achieve its fiscal sustainability and improve its balance-of-payments position. Natural resource “curse” should not discourage seeking such a strategy, because there are many ways to avoid it. Furthermore, diversification of the production structure should be conceived as a process of “self-discovery” – discovery of the economy’s cost structure. The government should engage in a strategic collaboration with the private sector to discover the potential activities in the

country which are likely to be competitive. For this to be successful, the government must provide adequate inducements for entrepreneurs to engage in new activities, by increasing the private return to investments as close as possible to their social value.

Acquiring high-quality institutions should be an ultimate objective of the government, because not only do they dissipate the adverse effects of external shocks on the economy, they also help contain the conflict triggered by social fragmentation and constrain the corruption and the rent-seeking behaviour encouraged by natural resource rents. Institutions should be developed based on local knowledge, experiences and capabilities, but learning from the institutional arrangements prevailing in other countries can always help. Moreover, institutional reinforcements must be supported by measures to achieve social cohesion and political consensus in order for them to be efficient. Finally, financial development must be carried out effectively in order to enable the private sector to play its crucial role in the development and diversification of the economy. The Central Bank must further strengthen its prudential regulation and effective financial supervision. The authorities must develop an adequate legal framework for the financial sector and ensure better contract enforcement in the banking sector in Afghanistan.

The framework proposed in this dissertation for analysing and diagnosing macroeconomic instability can be applied to other developing countries and may serve as an efficient methodology for policy analysis and recommendation in such countries.



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